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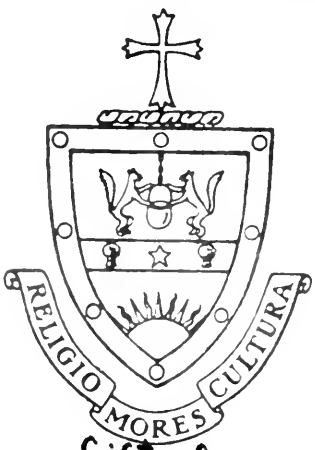

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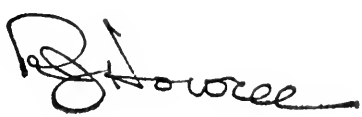

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House of Representatives.

REPORTS

OF THE

INSPECTORS OF MINES

OF THE

ANTHRACITE COAL REGIONS

OF

PENNSYLVANIA,

FOR THE

YEAR 1884.

HARRISBURG:
LANE S. HART, STATE PRINTER.
1885.

VIRTUE
LIBERTY AND
INDEPENDENCE

REPORTS

OF THE

INSPECTORS OF MINES

OF THE

ANTHRACITE COAL REGIONS OF PENNSYLVANIA,

FOR THE YEAR 1884.

OFFICE OF THE CLERK OF MINING DISTRICT OF SCHUYLKILL,
POTTSVILLE, *April 6, 1885.*

To His Excellency ROBERT E. PATTISON,
Governor of Pennsylvania:

SIR: In compliance with the provisions of the second section of the act of Assembly of June 2, 1871, I have the honor of submitting the following report of the office of clerk of the mining district of Schuylkill, comprising the counties of Schuylkill, Columbia, Northumberland, and Dauphin.

The average number of days worked by each breaker in the district for the year 1884 was one hundred and eighty-seven and two thirds ($187\frac{2}{3}$), being a decrease of twenty and one sixth ($20\frac{1}{6}$) days for each breaker in comparison with the year 1883, which will fully account for the decrease of coal mined and shipped to market.

The fatal casualties in the district for the year 1884, as reported by the inspectors, were one hundred and fourteen (114), a decrease of thirty (30) as compared with 1883; a very gratifying result, showing conclusively that the miners and persons employed in and about the mines are following the recommendations and advice of the inspectors, and generally giving more attention to their personal safety.

The monthly reports, made by direction and for the information of the court, have been regularly filed in the office of the prothonotary for the county of Schuylkill.

The operators and coal companies have continued to make their returns

promptly during the year, for which they are again entitled to my earnest thanks.

I am also under obligations to Mr. H. C. Troutman, of the Philadelphia and Reading Coal and Iron Company, and Mr. E. M. Williams, forwarding agent of the Lehigh Valley Railroad Company, for monthly returns furnished this office.

A summary of the total production of coal mined, number of employés, fatal and non-fatal casualties of the several divisions of this district, and which have been more fully set forth in the reports of the inspectors, are hereto attached:

Total amount of coal shipped to market, Pottsville division,	1,679,662.07	
Consumed and sold at collieries,	100,959.06	
Total production,		1,780,621.13
Total amount of coal shipped to market, Shenandoah division,	4,246,849.08	
Consumed and sold at collieries,	265,950.19	
Total production,		4,512,800.07
Total amount of coal shipped to market, Shamokin division,	4,280,487.03	
Consumed and sold at collieries,	254,564.10	
Total production,		4,535,051.13
Total production for 1884,		10,828,473.13
Total production for 1883,		11,523,488.09
Decrease for 1884,		695,014.16
Total number of employés, Pottsville division,		7,114
Total number of employés, Shenandoah division,		14,884
Total number of employés, Shamokin division,		15,568
Total number of employés for district, 1884,		37,566
Total number of employés for district, 1883,		35,062
Increase for 1884,		2,504
Average number of days worked, Pottsville division,		175¼
Average number of days worked, Shenandoah division,		195¼
Average number of days worked, Shamokin division,		192½
Average for district, 1884,		187⅔

Total fatal casualties, Pottsville division,	15	
Total non-fatal casualties, Pottsville division,		61
Total fatal casualties, Shenandoah division,	43	
Total non-fatal casualties, Shenandoah division,		138
Total fatal casualties, Shamokin division,	56	
Total non-fatal casualties, Shamokin division,		174
Total for 1884,	113	373
Ratio of tons for each fatal casualty,		94,986.12
Ratio of tons for each non-fatal casualty,		29,030.15
Ratio of employés to each fatal casualty,		329 +
Ratio of employés to each non-fatal casualty,		100 +

The expenses of this office for the year 1884, including rent, light, fixtures, postage, salary, and incidental expenses, amounted to one thousand seven hundred and seventy-nine $\frac{28}{100}$ dollars, but owing to the contingent fund having been exhausted, the vouchers presented to the Auditor General were not paid in full, leaving a deficiency on account of rent unpaid. The actual amount paid, for which vouchers have been returned to the Auditor General's office, was one thousand six hundred and seventy-nine $\frac{28}{100}$ dollars.

Respectfully submitted.

RICHARD RAHN,
Clerk of Mining District of Schuylkill.

FIRST DISTRICT.

FIRST SCHUYLKILL DISTRICT, OFFICE OF INSPECTOR OF MINES,
POTTSVILLE, PA., *April 5, 1885.*

To His Excellency ROBERT E. PATTISON,
Governor of Pennsylvania:

SIR: I have the honor of presenting herewith my tenth annual report as inspector of coal mines, for the year ending December 31, 1884, in accordance with the twenty-second section of a general act of Assembly, passed March 3, 1870.

The matter contained herein consists of the usual forms and tables relating to accidents arising from various causes in and about the mines of this district, together with such other information which, in our opinion, may be of general interest.

It affords us great pleasure to be enabled to report that the number of fatal accidents was four less, and the non-fatal was ten less, than that of the preceding year. The most noticeable feature, and one meriting special mention, is the decrease in the number of fatal accidents resulting from explosions of fire-damp, a record of which will be found in tables Nos. 6 and 7, showing the number of lives lost by explosions during the past ten years; and it is gratifying to us to state that not one life has been lost during the past year from this source, for which result the colliery officials in general, together with the workmen, deserve more than usual credit. We may venture to state that this is the first year during the past twenty-five that some lives have not been lost in this section of the coal field by explosions of gas.

The total output of coal, including that used and sold at the mines, was 1,780,621 tons.

Fifteen persons were fatally injured, or killed instantly; four of the number, two of whom were carpenters, were killed on the surface; sixty-one persons were injured. The cause and extent of their injuries will be found under the head of fatal and non-fatal casualties.

SAMUEL GAY,
Inspector of Mines.

TABLE No. 1.—*Comparative statement of fatal and non-fatal casualties for the years 1883 and 1884.*

FATAL CASUALTIES.

	YEARS.	
	1883.	1884.
Explosions of fire-damp,	2	0
Falls of coal and roof,	6	4
Crushed by mine cars,	4	4
By machinery on the surface,	0	0
By machinery underground,	0	0
Falling down shafts,	0	0
Falling down slopes,	0	1
Breaking of ropes,	1	0
Explosions of blasting material,	1	2
Miscellaneous,	5	4
Total,	19	15

Number of Fatal Accidents and Amount of Coal produced per Life Lost.

	No. of fatal accidents.	Tons of coal mined per fatal accident.
Philadelphia & Reading Coal and Iron Company,	9	99,080
Lehigh Coal and Navigation Company,	3	153,113
Alliance Coal Company,	0	120,958
Individual firms,	3	102,807

TABLE No. 2.—*Non-Fatal Casualties.*

	YEARS.	
	1883.	1884.
Explosions of fire-damp,	2	4
Falls of coal and roof,	20	26
By mine cars,	25	11
By machinery on the surface,	2	0
By machinery underground,	0	0
Falling down shafts,	0	0
Falling down slopes,	0	0
Breaking of ropes,	0	0
Explosions of blasting materials,	4	2
Miscellaneous,	19	18
Totals,	72	61

TABLE No. 3.—*Showing the amount of coal produced during the years 1883 and 1884 respectively.*

	Years.	
	1883.	1884.
Amount of coal shipped,	1,759,588	1,679,662
Amount of coal used or sold at the mines,	95,799	100,952
Totals,	1,855,387	1,780,621

TABLE No. 4.—*Comparison between the years 1883 and 1884.*

	Years.	
	1883.	1884.
Number of persons employed,	7,075	7,114
Tons of coal produced, per life lost,	97,651	118,708
Ratio of employés, per lives lost,	$272\frac{7}{10}$	$474\frac{4}{15}$
Number of tons mined, per each personal injury,	$25,072\frac{5}{10}$	29,190
Average number of tons mined per employé,	$262\frac{5}{10}$	$250\frac{06}{62}$
Ratio of employés, per each personal injury,	97	$114\frac{46}{62}$

TABLE No. 5.—*Taking the death rate per thousand as a basis of comparison between the different companies and individual operations, we have the following ratios.*

Operators.	Number of employés.	Number of deaths.	Death rate per thousand.
Philadelphia & Reading Coal and Iron Company,	3,947	9	2.28
Lehigh Coal and Navigation Company,	1,249	2	1.60
Alliance Coal Company,	583	0	0.00
Individual concerns,	1,335	4	2.99
Totals,	7,114	15	2.10+

Condition of Collieries.

We may venture to state that without a doubt the mines in general in this district are in much better condition than they formerly were, both in respect to the health and safety of persons employed in and about them, which were the two main points the framers of the present mine law desired to set forth.

The following tables, Nos. 6 and 7 respectively, give a summary of the fatal accidents, together with the number of employés; also the total output of coal during the past ten years. These, in our opinion, furnish sufficient evidence to justify us in making the above assertion:

TABLE No. 6.—*Showing a summary of fatal casualties for the period of the last ten years.*

	Dates.					Totals.	Aggregate.
	1875.	1876.	1877.	1878.	1879.		
Explosions of fire-damp,	7	10	14	3	5	39	
Falls of coal and roof,	11	5	5	5	10	36	
Crushed by mine cars,	1	. . .	1	. . .	4	6	
Crushed by machinery on surface,	1	1	. .	. . .	. . .	2	
Crushed underground.							
Falling down shafts,	. . .	1	. . .	. . .	. . .	1	
Falling down slopes,	. . .	4	1	. . .	. . .	5	
Breaking of ropes or chains,	4	5	1	. .	. .	10	
Explosions of blasting material,	1	2	1	2	3	9	
Miscellaneous,	3		4	4	2	13	
Totals,	28	28	27	14	24	. .	121
	1880.	1881.	1882.	1883.	1884.		
Explosions of fire-damp,	4	2	1	2	.	9	
Falls of coal and roof,	6	5	6	6	4	27	
Crushed by mine cars,	2	5	3	4	4	18	
Crushed by machinery on surface,	. . .	2	2	. . .	. .	4	
Crushed underground.							
Falling down shafts,	. . .	1		. . .	. .	1	
Falling down slopes,	. . .	. .	1	. . .	1	2	
Breaking of ropes or chains,	. . .	1	. . .	1	. .	2	
Explosions of blasting material,	1	. .	3	1	2	7	
Miscellaneous,	2	2	4	5	4	17	
Totals,	15	18	20	19	15		87

TABLE No. 7.

Years.	Deaths caused by explosions of gas.	Total number of deaths.	Total number of employés.	Tons of coal produced per life lost.	Total output of coal, in tons.
1875,	7	28	4,626	54,581	1,528,280
1876,	10	28	5,500	52,126	1,459,556
1877,	14	27	5,847	58,547	1,580,780
1878,	5	14	6,000	87,791	1,229,081
1879,	3	24	6,242	77,298	1,855,164
Average,	7 1/5	24 1/5	5,643	66,068 3/5	1,530,573 3/5
1880,	4	15	6,913	97,404	1,461,070
1881,	2	18	6,497	101,647	1,829,656
1882,	1	20	6,633	85,464	1,709,280
1883,	2	19	7,075	97,651	1,855,387
1884,	0	15	7,114	118,708	1,780,621
Average,	1 1/5	17 2/5	6,846 2/5	100,174 1/5	1,727,202 1/5

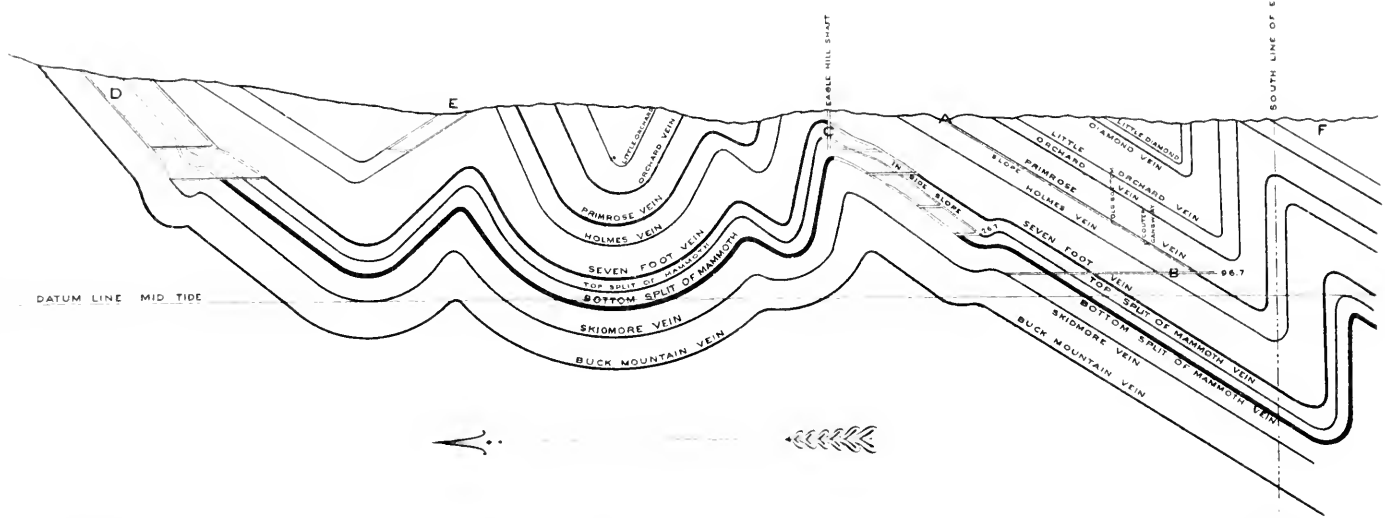
CROSS SECTION

THROUGH

EAGLE HILL COLLIERY

IN THE LINE OF THE PRIMROSE SLOPE

SCALE 850 FT 1 INCH



Eagle Hill Colliery.

Extensive improvements of a very substantial character have been made at this colliery during the past year, consisting of a new breaker with the latest improved machinery, and other appliances for handling and preparing the output of the mine; also a pair of powerful, direct-acting, hoisting engines, with cylinders thirty-two inches (32 in.) in diameter, by sixty-inch (60 in.) stroke (32 in.x60 in.,) and having cast-iron spiral cone drums, the largest diameters of which are eighteen (18) feet, and the smallest twelve (12) feet. These engines are capable of hoisting three cars containing nine tons of coal 1,375 feet in a minute. A new fan fifteen (15) feet in diameter has also been erected, by which a portion of the workings will be ventilated. Twenty (20) new steam boilers thirty-four inches (34 in.) in diameter by thirty feet (30 ft.) long have been put in place for the steam supply.

The main hoisting slope, sunk on the Primrose vein, has an average angle of about 35°, and is 1,375 feet long.

A tunnel 174 yards in length has been driven from the Primrose vein, cutting the Holmes, Seven Foot, Top and Bottom splits of the Mammoth, and Skidmore veins.

These six seams of coal have an aggregate thickness of from sixty (60) to seventy (70) feet, averaging as follows:

Name of Vein.	*Thickness.*
Primrose,	10 feet.
Holmes,	5 "
Seven Foot,	8 "
Top split,	15 "
Bottom split,	20 "
Skidmore,	8 "

On the above-named seams there is sufficient unworked territory, including the tunnel levels, for the opening of from sixteen (16) to twenty (20) gangways with lifts (or run of breasts) from 80 to 100 yards.

This, however, is but a comparatively small proportion of the large area of available coal that may be obtained from the present levels. By looking at the accompanying cross-section it will be seen that by continuing tunnel "B," a basin of coal of an almost unlimited area extending east and west several miles, and having no artificial barriers to interfere with the extension of the workings, may be opened.

Taking all things into consideration, without a doubt this colliery can be made the largest producer as yet opened in the anthracite coal fields. We do not hesitate to say that this colliery can be made to produce half a million tons of marketable coal annually. We are indebted to R. C. Luther, Esq., mining engineer of the Philadelphia and Reading Coal and Iron Company for the accompanying cross-section through Eagle Hill colliery.

References to accompanying sketch showing cross-section through Eagle Hill colliery, in the line of the Primrose slope.

A—Primrose slope.
B—Tunnel from Primrose to Skidmore vein.
C—The Old Oliver shaft.
D—The Old Windy Harbor colliery.
E—Old Whitfield slope, sunk on Holmes vein.
F—Alliance Coal Company's land.

Old Lincoln Colliery.

A new slope has been sunk on the No. 1 vein six hundred feet below the water level, and four gangways are being opened on it. The colliery breaker has been remodeled and fitted out with new machinery, and it is expected that the new slope will furnish an adequate supply of coal to run it to its fullest capacity.

IMPROVEMENTS MADE DURING THE YEAR.

North Lincoln Colliery.

This new colliery, referred to in our last report as then being opened by Levi Miller & Co., was completed during the early part of the year, and enabled the operators to commence shipping coal. The improvements in general are of a substantial character, having a capacity of two hundred thousand (200,000) tons per year.

Kaska William Shaft Colliery.

A new breaker has been erected during the year, having a capacity of one thousand (1,000) tons per day. It is built of North Carolina yellow pine, and fitted out with the most improved machinery, and appliances for handling and preparing the production of the mine. At the head of the colliery shaft, as a protection against fire, an angle iron head frame together with a platform on which to handle the cars as they are taken off and put on the shaft cages, have also been erected.

Descriptive Record of Fatal Accidents.

ACCIDENT No. 1.—January 28, John A. Richards, inside foreman at Lehigh Coal and Navigation Company colliery, No. 10, was killed by falling down Greenwood, No. 2, slope. As the deceased was alone at the time of the accident, there is no positive proof to show what he was doing, or what caused his fall. At the time of the occurrence, this slope was used as a pumping station, and for furnishing coal for steam purposes. It dipped at an angle of from 45° to 50°, and the road-tracks were completely frozen over. The general opinion was that Richards attempted to cross over to the other side of the slope, and in so doing slipped on the ice, and fell to the bottom of the slope.

Accidents Caused by Falls of Coal and Roof.

Accident No. 8.—June 14, Frank Wolff, a miner at Lincoln colliery, owned by the Philadelphia and Reading Coal and Iron Company, was killed by a piece of slate falling on him at the face of No. 5, east gangway.

Accident No. 10.—July 21, Edward Edwards, a miner at Eagle Hill shaft, owned by the Philadelphia and Reading Coal and Iron Company, was injured by a fall of coal, and died in about three weeks after from the effects.

Accident No. 11.—July 27, Henry Nedlinger, a gangway laborer at New Lincoln colliery, operated by Levi Miller & Co., was injured by a prop falling on him, and died from the effects of his injuries.

Accident No. 13.—John Quinn, a miner at Repplier colliery, operated by Quinn & Dennings, was crushed to death by a fall of coal and slate at the head of a manway while robbing a pillar.

Accident No. 5.—Peter McGee, a laborer employed with a gang of men in re-timbering the gangway at No. 8, Lehigh Coal and Navigation Company colliery, by being caught between a chute and a truck of timber on which he was riding in the mine. An empty car had been attached to the timber truck, so that the repairsmen could ride in to the place where they were to work; but McGee preferred to ride on the top of the truck loaded with timber, although advised to get into the empty car, and thereby lost his life.

Accident No. 7.—May 6, Michael Learey, an inside driver in Pottsville Shaft colliery, was crushed to death by a loaded car running upon him. At the time of the accident, the boy was taking out his trip alone, and when found he was lying under the first car, and the supposition is that while attempting to unhook the mule he fell, and the car ran over him.

Accident No. 4.—March 26, James Cook, a miner at Otto colliery, owned by the Philadelphia and Reading Coal and Iron Company, was killed by being run over by a loaded car, while walking out of the gangway toward the bottom of the slope. The circumstances of this accident are as follows: Cook, with some other workmen, having finished their day's work, were on their way to the slope bottom; when within a few hundred yards of that point, they were overtaken by a trip of loaded cars, passing out in the same direction. The men stood on the lower side of the gangway to allow the trip to pass them; as soon as they saw what they thought to be the last car, all except Cook ran and jumped on that car, and rode out to the slope bottom. When the driver of the trip examined it, he saw he had lost one of the cars on the road, and at once returning with his mules to bring it out, he found Cook's lifeless body lying under it. The car had become uncoupled from the balance of the trip, and in consequence of the gangway having a little more grade than is usually the case, being impelled by gravity, and following behind the other part of the trip, it overtook the unfortunate man, who thought himself safe, and crushed him to death underneath it.

ACCIDENT No. 13.—September 22, Daniel Richards, a laborer at Otto colliery, owned by the Philadelphia and Reading Coal and Iron Company, was instantly killed by being run over by a trip of loaded cars on a gravity gangway. Richards and some of his fellow-laborers had brought a trip of loaded cars to the head of the grade, and, as usual, the trip was stopped in order to allow the driver with his mules to reach the bottom of the grade, at which point he had to signal the runners waiting at the head, that "all was safe." In this case, however, the runners did not wait for the signal, but must have followed immediately after the man and mules, at the same time losing control of the speed of the cars, which rushed down the grade at a fearful rate, and caught the unfortunate victim and his team when about half-way down the grade, killing both man and mules. Fortunately, no other persons were injured, although there was another man with Richards, riding one of the mules; but hearing the cars coming at an unusual rate, jumped from the mule and escaped without being injured. That this young man lost his life through the recklessness of his companions, cannot be questioned, although the verdict of the jury was to the contrary.

Accidents Caused by Explosions of Powder.

ACCIDENT No. 12.—September 13, Michael Duffey, a miner at Eagle colliery, owned by the Philadelphia and Reading Coal and Iron Company, died from injuries received by an explosion of powder which he was using at that time. It appears from the testimony taken at the coroner's inquest, that Duffey was preparing a cartridge of powder, and was in close proximity to two kegs partly filled with powder. Whether a spark dropped by the deceased fell into one of the kegs, or whether it fell amongst the loose powder which was scattered on the floor of the gangway, (as was claimed,) we cannot say; however, the powder in both kegs was ignited, burning Duffey in a fearful manner.

ACCIDENT No. 14.—October 11, James Collins, a miner, was instantly killed by the premature explosion of a blast in the Thomaston colliery, operated by the Philadelphia and Reading Coal and Iron Company. The deceased had attempted to fire a shot a few minutes previous to the accident, and from some unknown cause the squib failed to explode the powder. After waiting some little time, Collins returned to the face of his working place for the purpose of applying another squib. Shortly after this the miner working with him heard the blast explode, and when he went to see what had happened, found Collins' mangled body lying within a few feet of the hole that had been charged.

Miscellaneous Accidents on the Surface.

ACCIDENT No. 6.—March 31, Andrew Bartch, an outside laborer at Lehigh Coal and Navigation Company's colliery, No. 12, was so seriously injured by being run over by a Jersey Central railroad car that he died from the effects of his injuries.

Accident No. 2.—January 31, Joseph Raush, a carpenter, was killed at Eagle Hill colliery, owned by the Philadelphia and Reading Coal and Iron Company. He, together with several other carpenters, were employed at the colliery putting up a temporary frame building under which the foundations of the new hoisting engines were to be built. The work progressed without any mishap until they were ready to raise the main rafters, which, at the time of the accident, were being placed on a temporary scaffold on the main cross-ties; however, before they had the whole of these on the scaffold, the cross-ties gave way, carrying the men down along with them, and killed Raush, and injured several of the other carpenters.

Accident No. 3.—March 8, John Hime, a carpenter, was so seriously injured in falling from a scaffold on which he was repairing the trestle-work running from the slope to the breaker at Otto colliery that in several days after the accident he died.

Accident No. 9.—June 23, Robert Hayes, an outside laborer at Middle Lehigh colliery, was killed by the breaking down of the trestling on which the coal was conveyed from the slope to the breaker.

Recapitulation.

Number of employés under ground,	4,168
" " above ground,	2,946
Number of persons killed under ground,	11
" " " above ground,	4
Number of persons seriously injured above ground,	9
" " " " under ground,	52
Tons of coal shipped,	1,679,662
Estimated amount used at mines,	100,952
Number of steam boilers in use,	637
Number of steam boiler explosions,	5
Number of ventilating fans in use,	48
Number of breakers in operation,	47
Number of surface slopes in use,	37
Number of shafts in use,	9
Number of underground slopes in use,	7
Number of water-level openings,	21
Number of kegs of powder used,	33,312
Number of mine locomotives used,	7
Average number of days worked by breakers,	175¼

REGISTER OF FATAL CASUALTIES—POTTSVILLE DIVISION, FOR THE YEAR 1884.—MINING DISTRICT OF SCHUYLKILL.

Number.	Date.	Names.	Collieries.	Occupation.	Age.	Married or single.	Children.	Remarks.
1	Jan. 28	John O. Richardson,	Greenwood slope,		44	Married,	5	Killed; slipped on the ice and fell down slope.
2	30	Joseph Raush,	Eagle Hill shaft,	Carpenter,	24	Single,		Killed by falling off the scaffold at new engine-house.
3	Mar. 8	John Hime,	Otto,	Carpenter,	28	Single,		Died from the effect of injuries received by falling off a scaffold.
4	26	James Cook,	Otto,	Miner,	37	Single,		Killed by a loaded wagon running over him.
5	27	Peter McGee,	Lehigh, No. 8,	Laborer,	62	Married,		Died from injuries received riding on car of timber.
6	31	Andrew Bartsch,	Lehigh, No. 12,	Laborer,	20	Single,		Died from injuries received; ran over by car on coal plane.
7	May 6	Michael Leary,	Pottsville,	Driver,	16	Single,		Killed by being run over by a loaded wagon.
8	June 14	Frank Wolff,	Lincoln,	Miner,	42	Married,	6	Killed by a fall of top slate.
9	23	Robert Hay,	Middle Lehigh,	Laborer,	18	Single,		Killed by the fall of a trestle.
10	July 21	Edward Edwards,	Eagle Hill shaft,	Miner,		Married,	8	Died from injuries received by a fall of coal.
11	27	Henry Neitlinger,	New Lincoln,	Laborer,	38			Died from injuries received by fall of prop, slate, and laggins.
12	Sep. 13	Michael Duffy,	Eagle,	Miner,	35	Married,	3	Died from injuries received by explosion of a keg of powder.
13	22	Daniel Richards,	Otto,		23			Killed by being caught on plane gangway by a trip of cars.
14	Oct. 11	James Collins,	Thomaston,	Miner,				Killed by the firing of a shot.
15	18	John Quinn, Jr.,	Reppller,	Miner,	24	Single,		Killed by a fall of coal.

REGISTER OF NON-FATAL CASUALTIES—POTTSVILLE DIVISION, FOR THE YEAR 1884.—MINING DISTRICT OF SCHUYLKILL.

No.	DATE.	Name.	Colliery.	Occupation.	Remarks.
1	Jan. 16	James Hargraves,	Pine Forest,	Miner,	Arm broken; caused by a fall of a piece of coal.
2	22	Edward Blunt,	Lehigh, No. 8,	Driver,	Leg severely bruised; caught between stretcher-stick and car.
3	22	John Maul.	Otto,	Repairman,	Face and hands burned by an explosion of gas.
4	23	Fred. Isenberg,	Lehigh, No. 12,	Miner,	Cut across the eye.
5	23	John W. Boyle,	No. 2 Tunnel,		Fell from timber-horse in face of gangway, and hurt his side.
6	29	Frank Boner,	Lehigh, No. 12,	Laborer,	Leg cut.
7	30	George Phillips,	Lehigh, No. 12,	Miner,	Side injured; slipped on rail in bottom of slope.
8	30	John Nettinger,	Eagle Hill,	Carpenter,	Injured inwardly; caused by frame of temporary engine-house giving way.
9	Feb. 11	Barney Gallagher,	Lehigh, No. 10,	L. C. loader,	Leg cut; caught between top of car and chute.
10	11	James Earley,	Greenwood Slope,	Machinist,	Severely cut; caught between pump-rod and slope-timbers.
11	19	Stephen Tonkins,	Lehigh, No. 12,		Leg broken; caused by a fall of coal.
12	26	David Blystone,	Kalmia,	Miner,	Head burnt and bruised; car knocked timber out, which fell on him.
13	28	Patrick McHugh,	Lehigh, No. 12,	Miner,	Breast injured; caused by a fall of coal.
14	March 4	James McCabe,	Colket,	Bottomman,	Leg broken; caused by the engine starting while he was fastening rope on truck.
15	7	Henry Rosenberger,	Glendower,	Miner,	Head and hand cut by a fall of coal.
16	15	John Hoskins,	Herbine,	Miner,	Seriously injured by a fall of coal.
17	23	William Luckenbill,	Otto,	Pulleyman,	Arm broken; caused by water-tank striking him while putting in a pulley.
18	31	Dominic Sockaritch,	Middle Lehigh,	Laborer,	Burnt on face and neck by premature explosion of powder.
19	April 24	Archie Foster,	Lehigh, No. 11,	Loader,	Leg broken; caused by a fall of slate from battery.
20	30	James Sullivan,	Pine Forest,	Miner,	Arm broken; caused by a piece of stone falling on him.
21	30	Jacob Yost,	Pine Forest,	Miner,	Head cut and body bruised; caused by a piece of stone falling on him.
22	May 2	Michael Coyle,	Lehigh, No. 8,	Miner,	Badly cut on head and limbs; caused by a fall of coal.
23	3	Morgan Jenkins,	Lehigh, No. 10,	Miner,	Badly cut on head; caused by firing gas, and fell down back-hole through fright.
24	9	Thomas Wilson,	Wadesville,	Miner,	Back supposed to be broken; caused by a piece of top coal falling on him.
25	13	James Carroll,	Otto,	Laborer,	Thigh cut while unloading wagons loaded with rails.
26	15	Michael Campion,	Glendower,	Miner,	Leg broken; caused by a fall of coal.
27	27	Charles Burns,	Lehigh, No. 12,	Miner,	Part of finger taken off while going up slope in gun-boat.
28	June 9	Mat. Morrison,	Lehigh, No. 8,	Driver,	Leg broken and ankle out of joint; caught between stretcher and rail.
29	27	Michael D. O'Brien,	Thomaston,	Miner,	Rib broken; caused while barring a piece of coal.
30	July 14	Frank Kearney,	Thomaston,	Engineer,	Injured internally while lifting a plank.
31	17	James Bergan,	Mine Hill Gap,	Miner,	Back and hip injured by a fall of coal.
32	19	George Roth,	Eagle Hill,	Carpenter,	Head cut; fell down with derrick.
33	24	John Johnson,	Colket,	Driver,	Arm broken; dumper tripped and threw him under.
34	28	George Willing,	Lehigh, No. 10,	Laborer,	Finger cut off; caused by a fall of top coal.
35	Aug. 5	William McGuire,	Middle Creek Shaft,	Starter,	Hand blown off; caused by the premature discharge of a shot.
36	14	Michael O'Brien,	Mine Hill Gap,	Starter,	Finger cut off; caused by a fall of coal.
37	19	Patrick Pryor,	Otto,	Loader,	Collar-bone broken; caused by a car jumping the track.
38	20	Andrew Aker,	Lehigh, No. 11,	Road car-shops,	Finger broken; struck with hatchet while driving spike.
39	25	Samuel Patterson,	Lehigh, No. 10,	Loader,	Hand cut off while attempting to jump on moving train.
40	26	Michael Winkle,	Lehigh, No. 10,	Laborer,	Cut on leg and hands; swept down chute by a rush of coal.
41	26	William Williams,	Palmer Vein,	Miner,	Burnt by an explosion of gas.
42	26	John Howells,	Palmer Vein,	Miner,	Burnt by an explosion of gas.
43	Sept. 11	John T. Wood,	Woods,	Driver,	Leg broken; caught in wheel of wagon.
44	13	William Ushman,	Lehigh, No. 12,	Miner,	Finger cut off; caught in gun-boat.
45	16	Henry Greby,	Lincoln,	Miner,	Back and side crushed by a fall of coal.
46	Oct. 11	Reno Haertter,	Kalmia,	Locomotive condr.	Hips burned and hurt; caught between locomotive and timber.

REGISTER OF NON-FATAL CASUALTIES.—Continued.

No.	DATE.	Name.	Colliery.	Occupation.	Remarks.
47	13	Thomas Madden,	Eagle,	Miner,	Ankle broken; caught by a piece of coal.
48	13	Arthur Hunt,	Mine Hill Gap,	Driver,	Leg broken; foot caught in door of wagon.
49	20	Patrick Lawler,	Glendower,	Laborer,	Leg broken; piece of coal fell on him.
50	23	Charles Brennan,	Glendower,	Miner,	Displaced knee-cap; caused by falling down manway.
51	Nov. 7	Terry Farley,	Forestville,	Laborer,	Ribs broken; fell down a chute on a prop.
52	10	Thomas Powell,	Richardson,	Laborer,	Head and back bruised; fall of coal and slate.
53	12	John Hoffman,	Lehigh, No. 8,	Laborer,	Ribs broken; fell from transportation car.
54	13	James Flanagan,	Eagle Hill,	Driver,	Arm broken; struck by a plank.
55	27	William O'Boyle,	Foster's Tunnel,	Miner,	Cut on back of head by a fall of coal.
56	28	Winebert Sthal,	Kalmia,	Laborer,	Back and hips bruised; fall of coal.
57	Dec. 3	Andrew Murphy,	Foster's Tunnel,	Miner,	Head and back cut; caused by a fall of coal.
58	3	James Willing,	Lehigh, No. 10,	Miner,	Severely injured about shoulders; caused by a fall of coal.
59	6	William Weary,	Middle Creek Shaft,	Miner,	Leg broken; caused by a fall of coal.
60	12	Michael Goose,	Lehigh, No. 12,	Laborer,	Finger broken; caused by piece of coal falling on it.
61	20	David Garber,	Glendower,	Miner,	Head and back injured; struck by a piece of coal and knocked down manway.

COMPARATIVE STATEMENT OF CASUALTIES, TONNAGE, AND EMPLOYEES FOR FIVE YEARS IN FIRST OR POTTSVILLE DIVISION OF MINING DISTRICT OF SCHUYLKILL.

YEARS.	Killed.	Injured.	Total.	Total number of employés.	Number of employés to each casualty.	Total number of tons of coal mined.	Number of tons of coal mined to each fatal casualty.	Number of tons of coal mined to each non-fatal casualty.	Ratio of tons of coal mined to casualties.	Number of tons of coal to each employé.
1880,	15	129	144	6,913	53½	1,461,070.17	97.404.14	11,362.02	10,146.06	211.07
1881,	18	173	191	6,497	34 3/191	1,829,656.06	101,647.11	10,516	9,579.06	281.10
1882,	20	91	111	6,632	59 83/111	1,709,280.12	85,464	18,783	15,398.01	257
1883,	19	74	93	7,075	75	1,855,387.17	97,651.14 11/19	25,072.06	19,950.08	262.05
1884,	15	61	76	7,114	93 23/38	1,780,621.13	118,708.02	29,190.10	24,745	250.06
Total,	87	528	615	34,231	315 87/100	8,636,017.05	500,876.01	94,923.18	79,819.01	1,262.08
Average,	17 2/5	105 3/5	123	6,846 1/5	63 17/100	1,723,203.09	100,173.04 1/5	18,984.15 3/5	15,963.18	252.09 3/5

NUMBER OF EMPLOYEES, COAL MINED, DAYS WORKED, &c.—*For the year ending December 31, 1884.*

Collieries.	Operators.	Number of tons of coal shipped.	No. of employees.			Number of days worked by breaker.	Number of kegs of powder used.	Number of pounds of dynamite used.	Yards of tunnel driven.	Number of new boilers put in.	Number of persons killed.
			Inside.	Outside.	Total.						
Beechwood,	Philadelphia and Reading Coal and Iron Company,	195	18	17	35	2½	. . .	. . .	. . . .	4	
Colket,	do. do.	33,369.09	58	88	146	183½	65	3,250	. . . .	12	
East Franklin,	do. do.	93	4	19	23	. .	25	250	. . . .	6	
Eagle Hill,	do. do.	82,294.10	202	122	324	197	1,095	3,250	178	4	12
Eagle,	do. do.	34,319.07	84	60	144	177¼	475	150	. . . .	6	1
Forestville,	do. do.	37,033.13	115	77	192	190⅝	1,625	250			
Glendower,	do. do.	41,542.15	145	101	246	185½	1,375	2,900	135½		
Kalmia,	do. do.	72,205.16	152	94	246	202¼	2,150	4,050	111⅝		
Lincoln,	do. do.	69,155.05	212	114	326	178	1,600	650	. . . .	14	1
Mine Hill Gap,	do. do.	68,596.08	147	133	280	190	1,200	800			
Middle Creek Shaft,	do. do.	58,856.03	140	107	247	198	1,150	1,350	44⅓		
Otto,	do. do.	56,078.04	194	114	308	178⅛	705	500	. . . .	8	3
Phœnix Park, No. 2,	do. do.										
Phœnix Park, No. 3,	do. do.	37,642.08	121	62	183	192½	1,098	. . .	. . . .	4	
Pottsville,	do. do.	12,458.06	52	39	91	111½	150	200	17⅔	8	1
Pine Forest,	do. do.	31,090.06	146	97	243	126¼	650	1,150	76⅔		
Rausch Creek,	do. do.	3,754.06	36	34	70	16½	235	100	. . .	12	
Richardson,	do. do.	72,498.02	181	116	297	194½	1,500	1,500	. . . .	12	
Swatara,	do. do.										
Thomaston,	do. do.	100,229	256	143	399	198	3,250	550	. . . .	. . .	1
Wadesville,	do. do.	29,554.14	79	68	147	205½	395	500	. . . .	5	
Lehigh, No. 8,	Lehigh Coal and Navigation Company,	107,858	254	184	438	193⅝	. .	. . . .	. . . .	. . .	1
Lehigh, No. 10,	do. do.	133,890.15	180	151	331	188⅜	720	. . . .	. . . .	. .	1
Lehigh, No. 11,	do. do.	102,133.14	165	126	291	186	1,740				
Lehigh, No. 12,	do. do.	89,456.11	129	58	187	206⅜	1,680	. . . .	. . . .	. . .	1
Lehigh, No. 13,	Swartz, Oliver & Jones,	33,817	37	25	62	228	175				
Kaska William,	Alliance Coal Mining Company,	52,300.07	136	111	247	185¼	1,169	11,050			
Palmer Vein,	do. do.	61,812.05	212	124	336	175½	1,700	950	. . .	8	
Middle Lehigh,	Mill Creek Coal Company,	100,600.08	227	187	414	167¼	2,660	. . . .	25½	. . .	1
New Lincoln,	Levi Miller & Co.,	49,080.11	165	131	296	142	1,400	. . . .	. . . .	. . .	1
Herbine,	J. K. Sigfried,	37,730.08	125	60	185	184	1,600				
Ellsworth,	John R. Davis,	12,149	34	17	51	196½	. .	. .	86		
St. Clair,	Atkinson & Lessig,	3,136.01	12	5	17	161¾	30				
Sharp Mountain,	Thomas Wren,	665.10	4	3	7						
Oak Hill,	do.	6,725.18	16	11	27	207	300				
East Lehigh,	Mitchell & Shepp,	3,805.07	4	11	15	196	100				

Greenwood,	Andrew Raab,	749.16	6	6	12	58	25				
Monitor,	John Denning,	6,500	20	8	28	166	350				
Jugular,	Jacob S. Hepner,	1,129	3	3	6	208	30				
Crystal,	Joseph Brady,	5,977.04	11	11	22	220	200				
W. C. Big Diamond,	James F. Donohoe,	1,567	6	8	14	180	40				
Woods,	C. Wood,	1,600.01	6	2	8	252	35				
Kelchline,	P. O'Connor,	3,671	8	6	14	220	100				
Crumdu,	John Mullin & Co.,	1,353.19	4	2	6	160	40				
Black Valley,	Ed. Hoskins,	1,273	4	2	6	160	25				
Pine Dale,	L. Lorenz,						50	500			
Repplier,	James F. Quinn,	3,606.03	11	7	18	207¼	45			1	1
Altamont,	J. C. Hayden & Co.,	1,200	11	14	25		30				
New Castle,	B. F. Palm & Son,	360		2	2						
Kelm & Repp,	Samuel Meyers,	7.03									
Diamond,	John A. Lawrence,	2,941	6	4	10		75				
Swatara,	J. D. Felty,	1,426.02		4	4						
Peach Orchard,	Evans & Co.,	1,517.04	4	6	10		40				
Peach Mountain,	William H. Harris,	2,040	6	4	10		75				
Ebony,	Bowman & Co.,	5,077.04	10	20	30	140	350				
Newton,	Miesse, Diggles & Co.,	497	10	20	30	44	15				
Coal Hill,	Holohan & Bro.,	979		4	4						
	Dix & Edwards,	107.10		2	2						
	Shelly & Confair,	554		2	2						
		1,679,662.07	4,168	2,946	7,114	*175¾	33,312	32,950	675	94	15
Sold and consumed at collieries,		100,959.06									
Total,		1,780,621.13									

*Average.

NAMES OF COLLIERIES IN OPERATION AND COAL MINED IN THE POTTSVILLE DIVISION OF SCHUYLKILL DISTRICT FOR THE YEARS 1880-81-82-83-84.

NAMES OF COLLIERIES.	Location of Collieries.	Names of Operators.	1880.	1881.	1882.	1883.	1884.
1. Beechwood,	Mt. Laffee,	Philadelphia and Reading Coal and Iron Co.,	45,078.05	30,706.17	31,925.09	4,987.07	195.00
2. Colket,	Donaldson,	do. do.	25,481.08	43,221.15	31,484.08	35,661.17	33,369 09
3. East Franklin,	Upper Rausch creek,	do. do.	34,418.18	19,179.07	25,051.19	13,058.02	93.00
4. Eagle Hill Shaft,	Eagle Hill,	do. do.	56,427.16	70,084.12	69,814.10	73,872.17	82,291.10
5. Eagle,	St. Clair,	do. do.	44,446.14	49,361.19	28,594.07	28,126.09	34,319.07
6. Forestville,	Forestville,	do. do.	. . .	. . .	11,413.00	39,213.18	37,033.13
7. Glendower,	Glen Carbon,	do. do.	25,738.19	54,465.18	1,220.12	23,479.02	41,542.15
8. Kalmia,	Orwin,	do. do.	76,026.16	83,167.00	200,100.05	169,103.08	72,205.16
9. Lincoln,	Tremont township,	do. do.	125,170.08	146,899.17	165,678.07	176,673.17	69,155.05
10. Mine Hill Gap,	Minersville,	do. do.	35,028.18	48,902.09	51,540.09	66,988.16	68,596.08
11. Middle Creek Shaft,	Middle creek,	do. do.	. .	. . . . .	4,872.00	43,967.16	58,856.03
12. Otto,	Branchdale,	do. do.	35,639.09	55,905.05	11,422.09	32,082.05	56,078.04
13. Phœnix Park, No. 2,	Phœnix Park,	do. do.	24,468.11	33,011.00	32,963.18	8,859.13	abandoned.
14. Phœnix Park, No. 3,	Phœnix Park,	do. do.	18,771.01	22,163.01	30,676.03	38,031.12	37,642.08
15. Pottsville,	Pottsville,	do. do.	39,062.10	16,478.08	42,625.19	59,502.15	12,458.06
16. Pine Forest,	St. Clair,	do. do.	33,050.11	41,549.12	32,468.02	60,023.10	31,090.06
17. Rausch Creek,	Tremont township,	do. do.	82,608.19	85,382.03	62,682.17	74,503.12	3,754.06
18. Richardson,	Glen Carbon,	do. do.	70,773.14	58,388.16	66,381.00	66,248.15	72,498 02
19. Swatara,	Swatara,	do. do.	21,463.18	53,124.04	41,725.05	3,141.05	not shipping
20. Thomaston,	Heckscherville,	do. do.	77,186.03	82,975.19	70,784.06	93,840.02	100,229.00
21. Wadesville Shaft,	Wadesville,	do. do.	106,388.00	110,874.08	15,233.04	5,240.10	29,554.14
22. Lehigh, No. 8,	Coal Dale,	Lehigh Coal and Navigation Company,	96,145.12	140,365.11	107,423.18	93,299.04	107,858.00
23. Lehigh, No. 10,	do.	do. do.	91,509.01	83,463.04	116,259.10	107,973.18	133,890 15
24. Lehigh, No. 11,	do.	do. do.	40,806.05	81,525.10	76,955.00	83,430.19	102,133.14
25. Lehigh, No. 12,	do.	do. do.	. . . . .	. . . . .	. . . . .	48,793.00	89,456.11
26. Lehigh, No. 13,	Tamaqua,	Schwartz, Oliver & Jones,	. . . . .	. . . . .	. . . . .	12,847.00	33,817.00
27. Kaska William,	New Philadelphia,	Alliance Coal Mining Company,	. . . . .	. . . . .	. . . . .	19,519.00	52,300.07
28. Palmer Vein,	do. do.	do. do.	23,772.00	28,000.00	35,596.00	48,292.07	61,812.05
29. Middle Lehigh,	New Boston,	Mill Creek Coal Company,	47,601.00	153,924.11	146,422.01	135,429.13	100,600.08
30. New Lincoln,	Tremont township,	Levi Miller & Co.,	. . . . .	. . . . .	. . . . .	. . . . .	49,080.11
31. Herbine,	Minersville,	J. K. Seigfried,	26,883.09	21,132.02	6,245.03	19,298.05	37,730.08
32. Ellsworth,	New Castle,	John R. Davis,	10,426.13	11,933.02	15,036.00	12,884.00	12,149.00
33. St. Clair,	St. Clair,	Atkinson & Lessig,	2,253.13	3,524.17	4,858.05	4,882.02	3,136.01
34. Sharp Mountain,	Pottsville,	Thomas Wren,	3,913.15	2,510.00	1,265.10	794.00	66.10
35. Oak Hill,	Mt. Laffee,	do. do.	. . . . .	. . . . .	320.10	3,319.01	6,725 18
36. East Lehigh,	Tamaqua,	Mitchell & Shepp,	5,677.17	10,116.08	8,461.02	2,096.13	3,805.07
37. Greenwood,	do.	Andrew Raab,	1,306.06	2,776.00	2,480.00	2,570.00	749.10
38. Monitor,	Wadesville,	John H. Denning,	2,585.04	1,854.07	2,840.00	5,611.00	6,500.00
39. Jugular,	New Castle,	Jacob S. Hepner,	895.07	869.04	1,049.17	1,099.01	1,129.00
40. Crystal,	do.	Joseph Brady,	. . . . .	. . . . .	5,149.11	3,900.00	5,977.04
41. W. C. Big Diamond,	Wolf creek,	James F. Donohue,	5,005.01	8,000.00	5,860.00	2,130.16	1,567.00
42. Woods,	Swatara,	C. Woods,	. . . . .	1,054.12	887.02	1,510.12	1,600.01
43. Kelchline,	Heckscherville,	P. O'Connor,	. . . . .	. . . . .	217.00	2,409.00	3,671.00
44. Crumdu,	Wadesville,	John Mullin & Co.,	. . . . .	. . . . .	919.00	1,538.08	1,353.19

45. Black Valley,	Minersville,	Edward Hoskins,	1,710.03	1,942.16	1,666.17	1,150.12	1,273.00
46. Reppller,	New Castle,	John F. Quinn,		3,106.18	4,250.16	3,311.00	3,606.03
47. Lewis Tract,	Minersville,	Seth W. Geer,	773.07	207.18			
48. New Castle,	New Castle,	B. F. Palm & Son,			659.00	928.00	360.00
49. W. C. Diamond,	Minersville,	John A. Lawrence,		556.18	1,842.18	1,579.14	2,941.00
50. Swatara, No. 2,	Pine Grove,	John D. Felty,	719.00	1,046.05		1,237.00	1,426.02
51. Peach Orchard,	St. Clair,	—— Evans,	1,743.15	1,362.07	261.00	1,998.13	1,517.04
52. Peach Mountain,	Minersville,	Wm. H. Harris,					2,040.00
53. Ebony,	New Castle,	Bowman & Co.,					5,077.04
54. Newtown,	Newtown,	Miesse, Diggles & Co.,					497.00
55. Coal Hill,	Blythe township,	Holohan & Bro.,					979.00
56. West Lehigh,	Tamaqua,	Wood & Pearce,	14,357.10	16,500.00	12,000 00	7,698.17	abandoned.
57. Chandler Tract,	Minersville,	Patrick Keenan,	426.05	100.00			
58. Chandler Tract,	do.	William Lloyd,	60.00	9.10			
59. Black Mine,	Llewellyn,	J. D. Curtz Crook,	1,259.15	16,357.04	5,628.00		abandoned.
60. Tremont Lands,	Tremont,	Peter Laux,	402.15	131.05			
61. Furnace,	St. Clair,	John Wylam,	239.00	120.00	50.00	20.00	
62. Hiawatha,	Middleport,	S. Kestenbach,	150.00				abandoned.
63. Middleport,	do.	Louis Lorenz,	3,000.00	6,600.00	1,827.17		
64. Mammoth,	New Castle,	Mahaney & Co.,		750.00			
65. Garfield,		Tim Cockill,		252.04			
66. Keim & Repp,		S. B. Myers,		165.00		358.00	
67. Dundas, No. 7,		Davis & Co.,		5,000.00	9,981.17	3,646.00	abandoned.
68. Northdale,		John B. Church,			2,968.00		
69. Jonestown,		T. F. Quinn,			350.00		
70. Oakwood,		John Bortham & Co.,			1,000.00		
71. Morning Star,		Whyms & Morgan,			560.00		
72. Black Heath,		George Kantner,			729.00	1,654.00	
73. Pine Dale,		Louis Lorenz,				800.00	
74. Tamaqua,		Draper & Wittich,				385.10	
75.		John Rich,				1,000.00	
76.		Job Rich and others,				2,000.00	
77.		Vaughan & Co.,				871.00	
78.		J. J. Edwards & Co.,				56.10	
79.		Dix & Edwards,				268.10	107.10
80.		Shelly & Confair,					554.00
81.		Daniel Larer,			411.00		
Total,			1,367,531.06	1,726,089.12	1,612,526.16	1,759,588.17	1,679,662.07
Sold or consumed at collieries,			93,549.11	103,566.14	96,753.16	95,799.00	100,959.06
Total production,			1,461,070.17	1,829,656.06	1,709,280.12	1,855,387.17	1,780,621.13

SECOND DISTRICT.

LETTER OF TRANSMITTAL.

OFFICE OF INSPECTOR OF MINES,
SHENANDOAH, SCHUYLKILL COUNTY, *April 1, 1885.*

To His Excellency ROBERT E. PATTISON,
Governor of Pennsylvania:

SIR: In compliance with an act of Assembly approved March 3, 1870, entitled "An act to provide for the health and safety of persons employed in coal mines," I have the honor to submit the following annual report as inspector of mines for the Second inspection district of the anthracite coal region, for the year 1884.

In the following report, the results of my labors as inspector are presented in the usual form, the statistics being tabulated, and the result of inspections noted, together with some remarks as to safety, ventilation, improvements, and general condition of the mines during the year.

Hoping the *data* thus presented may be appreciated by those interested in the subject, I remain,

Yours respectfully,
ROBERT MAUCHLINE,
Inspector of Mines.

Casualties for 1884.

The number of lives lost in and around the mines of this district, during the year 1884, was forty-three (43), a decrease of four (4) as compared with the year 1883, and although the production of tons of coal mined has been less, still the number of tons mined for each life lost has been slightly increased, and shows at least some improvement in the matter of safety.

The total production of the district in tons, for 1884, was 4,512,800.07
The total number of employés was 14,884
The number of lives lost, ... 43

The number of persons injured,	138
The number of tons of coal mined for each life lost was	104,948.17
The number of tons of coal mined for each person injured was	32,701.09 +
The number of tons for each casualty was	24,987.06 —

The variations in these figures from year to year can be seen by comparative tables in the report.

Of the persons employed in and around the mines in this district in 1884, one person was killed or fatally injured out of every 353, and one injured out of every 110, and a casualty of some kind occurred to one in every 83 of those employed.

Of the 43 fatal casualties reported during the year, 37, or 86 per cent., occurred under ground, and 6, or 14 per cent., happened on the surface.

Of the 138 non-fatal casualties reported, 117, or 84 per cent., occurred under ground, and 21, or 16 per cent., on the surface.

The following table shows the number of employés, number killed and injured, together with the ratio for each class of employés:

	Number.	Number killed.	Number injured.	One killed in every	One injured in every
Inside employés:					
Miners,	4,456	25	74	178	60
Laborers and company men,	2,978	8	34	372	85
Drivers,	580	1	6	580	96
Door-boys,	259	2	2	129	129
Outside employés:					
Bosses and mechanics,	503	1	5	503	100 +
Laborers and company men,	2,216	5	7	443	317
Drivers and slate-pickers,	3,892	1	10	3,892	389

Class of Casualties.

Of the 37 lives lost inside the mines during the year,

20, or 54 per cent., were from falls of top or sides.
4, or 11 per cent., were from mine cars.
6, or 16 per cent., from handling and using explosives.
2, or 5 per cent., were from gas.
4, or 11 per cent., from falling in shafts and slopes, and
1, or 3 per cent., from miscellaneous causes.

Of the 6 lives lost above ground during the year,

4, or 66 per cent., were from cars.
1, or 17 per cent., from machinery, and
1, or 17 per cent., from miscellaneous causes.

Of the 117 injuries received inside the mines in 1884,

47, or 40 per cent., were from falls.
14, or 12 per cent., from cars.
11, or 9½ per cent., from explosions.
26, or 22¼ per cent., from gas.
7, or 6 per cent., by falling in shafts or slopes, and
12, or 10¼ per cent., from miscellaneous causes.

Of the 21 injuries received above ground,

9, or 43 per cent., were from cars.
1, or 5 per cent., were from boilers.
3, or 14 per cent., were from machinery, and
8 or 38 per cent., from miscellaneous causes

Table Showing the Number, Class, and Month on which occurred the Fatal Casualties for 1884.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total for 1884.	Total.
Fatal—inside.														
Accidents from falls of top and sides,		1		2	2	1	1	2	1	4	4	2	20	
" cars,	2	1						1					4	
" handling and using explosives,	2				1	1			2				6	
" gas, by explosion and suffocation,				1			1						2	
" falling in shafts and slopes,	1								2			1	4	
" miscellaneous causes,			1										1	
Monthly total,	5	2	1	3	3	2	2	3	5	4	4	4	37	
Fatal—outside.														
Accidents from cars,							1	1	1			1	4	
" boilers,														
" machinery,							1						1	
" miscellaneous causes,				1									1	
Monthly total,				1			2	1	1			1	6	—43

Table Showing the Number, Class, and Month on which occurred the Non-Fatal Accidents for 1884.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total for 1884.	Total.
Non-fatal—inside.														
Accidents from falls of top and sides,	2	5	5	4	4	1	7	5	4	1	5	4	47	
" cars,	1	1	1	1	. .	. .	5	3	. . .	.	1	1	14	
" handling and using explosives,	1	. . .	1	1	. .	6	2	. . .	. . .	. . .	. . .	. . .	11	
" gas, by explosion and suffocation,	3	. . .	4	4	3	1	4	. . .	2	5	. . .	. . .	26	
" falling in shafts and slopes,	. . .	1	1	1	. .	. . .	. . .	. . .	2	1	1	. . .	7	
" miscellaneous causes,	. . .	2	1	1	. . .	. . .	2	. . .	2	1	2	1	12	
Monthly total,	7	9	13	12	7	8	20	8	10	8	9	6	117	
Non-fatal—outside.														
Accidents from cars,	. . .	1	2	1	1	. . .	1	1	. . .	. . .	. . .	2	9	
" boilers,	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1	. . .	. . .	1	
" machinery,	. . .	. . .	1	. . .	. . .	. . .	. . .	1	. . .	. . .	1	. . .	3	
" miscellaneous causes,	1	. . .	. . .	2	1	. . .	. . .	2	. . .	2	. . .	. . .	8	
Monthly total,	1	1	3	3	2	. . .	1	4	. . .	3	1	2	21	—138

Safety.

The general condition of the mines in this district as to safety is improving, as shown by the decrease of all other kinds of casualties in proportion to those from falls, the class of accidents which might be charged to the management being now very few indeed. The fact that over fifty per cent. of all lives lost inside the mines are the result of falls prove that rigid discipline, by strictly-enforced special rules, is the only way in which we may expect improvement.

Health.

The sanitary condition of the mines at present, as compared with their condition a few years ago, cannot be shown by tables of statistics, but all who are familiar with the facts know that miners going home with a *headache* are now the exception, while a few years ago they were the rule. The decrease in the number of lives lost is only a small part of the result of improved ventilation when compared with the vast difference in regard to health. Hundreds were sent to early graves, after years of suffering, from bad ventilation, and yet their names are not recorded in the inspector's reports as having been killed in the mines.

Accidents from Gas.

There were twenty-eight persons injured by explosions of gas during the year, two (2) of which proved fatal. Every one of these accidents, without exception, were the result of gross negligence on the part of those injured. Of the twenty-six persons injured, eighty per cent. were very slight, the result of igniting small quantities, and nearly all occurred in collieries where moderate quantities of gas are given off. The miners, in such cases, are generally supplied with a safety-lamp, and ordered to examine with it always on reëntering their working place during their shift, and these injuries from gas are nearly all the result of failing or neglecting to comply with these orders. Still, the fact that only two fatal casualties from gas occurred in a district mining four and one half million tons of coal, where one third of the collieries give off large quantities of gas, and nearly all give off some; where the coal seams range from four to forty feet in thickness, and dip from seven to seventy degrees, all go to prove that the ventilation and general management of the district will compare with any other under similar conditions.

Improvements.

The Lehigh Valley Coal Company have commenced opening another colliery known as Packer, No. 5, which, when completed, is expected to be one of the largest and best equipped collieries in the anthracite region, details of which will probably appear in the inspector's report for 1885.

Lentz, Lilley & Co. have connected what was known as West Lehigh colliery with that formerly known as Coplay colliery, and when all the improvements are completed will work both as Park colliery, No. 1. They

have also re-opened the slope at "Trenton" as Park, No. 2, and sunk a new slope on the south dip of the Mahanoy basin south from "Trenton," as Park, No. 3. The coal from both will be prepared at their fine new breaker at "Trenton." All the new fittings and machinery at these collieries are of the most improved type, and everything that skill and capital can effect is being done to make the Park collieries second to none in the region.

The Buck Mountain Coal Company have also opened a new colliery on the north dip of the Mahanoy basin, east of Mahanoy tunnel. From the work done and in contemplation, Buck Mountain will soon rank as one of the first-class collieries of the district, and add largely to its annual production.

There has also been some preliminary work done with a view to re-opening the Silver Brook coal basin; and the work of sinking a slope will be commenced as soon as the proving holes, now being sunk, shall determine the "strike" of the *measures*.

The following details of improvements made at the collieries of the district have been furnished for this report by the courtesy of the companies and individual operators, for which, in the name of the readers of this report, I beg to tender my sincere thanks.

In the following tables will be found a register of the casualties, with comparative tables for past years. A table showing the tonnage, seams worked, with their reported thickness, and number of persons killed and injured at each colliery; also, a table showing ventilation, &c. Describing the fatal accidents in detail has been so often and so ably done in these reports that I have omitted it as unnecessary.

Ventilation Table.

Colliery.	No. of persons employed inside.	No. of cubic feet of air supplied per minute.
Girard,	163	17,614
Hammond,	197	50,236
Connor,	183	20,719
Girard Mammoth,	147	14,885
West Bear Ridge,	126	20,487
East Bear Ridge,	150	18,311
Turkey Run,	238	55,250
West Shenandoah,	192	60,722
Kohinoor,	309	38,022
Shenandoah City Drift,		73,000
Shenandoah City,	267	43,260
Plank Ridge,	263	65,699
Indian Ridge,	304	58,625
Ellangowan,	404	77,867
Knickerbocker,	300	11,997
Stanton,	121	20,000
Gilberton,	166	44,550
Bear Run,	160	36,973
Boston Run,	160	22,766
St. Nicholas,	145	35,000
Suffolk,	240	42,582
Tunnel Ridge,	155	19,240
Elmwood,	138	44,721

VENTILATION—Continued.

COLLIERY.	No. of persons employed inside.	No. of cubic feet of air supplied per minute.
Mahanoy City,	176	26,500
Schuylkill,	202	35,936
North Mahanoy,	128	21,832
Packer, No. 1,	126	27,853
Packer, No. 2,	280	56,715
Packer, No. 3,	246	186,222
Packer, No. 4,	289	117,200
Honey Brook, No. 1,	63	12,000
Honey Brook, No. 4,	263	16,000
Honey Brook, No. 5,	245	11,000
Cuyler,	140	12,000
William Penn,	325	80,000
Kehley's Run,	180	15,000
Oakdale,	21	3,700
Cambridge,	28	4,600
Lawrence,	154	30,000
South Laurel Ridge,	16	10,000
North Laurel Ridge,	16	4,500
Draper,	225	40,000
Glendon,	260	20,000
Primrose,	56	24,000
Buck Mountain,	79	28,000
Park, No. 1,	247	30,000

Improvements made at the collieries of the Lehigh Valley Coal Company during the year 1884:

Packer, No. 1.

Tunnel to Buck Mountain seam level, one hundred and ninety-seven feet long.

Packer, No. 2.

Tunnel to Holmes vein, second lift, two hundred and sixty-four feet long, and a tunnel to Primrose vein, on fourth lift, two hundred and seventy-nine feet long.

Packer, No. 3.

Tunnel to Buck Mountain vein, second lift, three hundred and twenty feet long. Tunnel to Buck Mountain vein, fourth lift, three hundred and seventy-eight feet long.

Packer, No. 4.

Tunnel to Primrose vein, second lift, one hundred and thirty feet long. Ventilating shaft to Buck Mountain vein, one hundred and two feet deep, with sixteen-foot exhaust fan. Self-acting plane, from second to third lift on Holmes vein, four hundred and thirty-four feet long.

LEHIGH AND WILKES-BARRE COAL COMPANY.

Honey Brook, No. 4.

Tunnel at top of East plane, from Mammoth to Wharton vein, one hundred and fifty feet in length.

Honey Brook Slope, No. 8.

Twelve-foot exhaust fan, with 10″×12″ vertical engine; slope, seventy-two yards; on Mammoth vein, north dip of No. 5 basin, fitted with pair of 9″×24″ hoisting engine, supplied with steam from a 4′ 6″ × 11′ tubular boiler.

Kehley's Run Colliery.

Thomas Coal Company. Built new dirt plane seven hundred feet long.

South Laurel Ridge.

John A. Dutter, operator. Sunk slope on Buck Mountain vein, one hundred and sixty yards. Built new breaker of capacity to prepare forty cars a day.

North Laurel Ridge.

John A. Dutter, operator. Sunk slope on small vein under Mammoth vein for the purpose of robbing pillars in first lift of abandoned workings on Mammoth vein of Gilberton colliery. The gangway to be driven in small underlying vein, and rock chutes driven through to each pillar in Mammoth.

Glendon Colliery.

J. C. Haydon & Co. Erected one Bradley jig in breaker with ten-horse-power engine. Erected endless chain haulage to return empty cars to slope; drove tunnel to bottom split of Mammoth vein, and drove a tunnel to Seven-Foot vein.

Primrose Colliery.

Nevels & Co. Erected a fifteen-foot exhaust fan, and rebuilt the breaker, fitted with new engine, machinery, &c.

IMPROVEMENTS MADE BY THE PHILADELPHIA AND READING COAL AND IRON COMPANY.

East Bear Ridge Colliery.

Two new boilers, 34″×30′, erected. A new water pipe line, sixteen hundred feet, four-inch Hautboy pipe, was laid from the Mud Run pipe line.

Stanton Colliery.

Two (2) new 9″×38″ steam pumps were put in slope.

Eight (8) boilers, 34″×30′, with two (2) boiler-iron stacks, 34″×36′, with frame house, 18′×54′, erected.

A new water pipe line, twenty-seven hundred feet, three-inch Hautboy pipe, was laid from East Bear Ridge colliery pipe line.

The breaker was extensively repaired.

A tunnel was driven north from first lift Mammoth vein, west gangway, to the Buck Mountain vein, striking the vein at sixty-seven yards.

Vein, eleven feet thick, with ten feet of coal. Dip, fifty-six degrees.

Gilberton Colliery.

A tunnel was driven north from second lift, bottom split, Mammoth vein, west gangway, eighty yards from slope, sixty-four and a half yards

to the Buck Mountain vein, being 7′ 1″ thick, with 5′ of coal, dip fifty-four degrees south.

The gangways east and west were then opened.

An airway was driven from the west gangway to the first lift, a distance of one hundred and twelve yards.

A hole was also driven on same gangway, four yards wide, in line of Furnace slope one hundred and sixteen yards to the first lift level, Gilberton colliery, and is now being inclined and timbered for a slope, and will be the continuation of the Furnace slope, which in the future will hoist all the lower lift coal.

The total length of slope from surface to second lift of the Gilberton colliery is two hundred and ninety-five and one third yards.

A tunnel was driven twelve and one half yards long from the bottom split, Mammoth vein, west gangway, one hundred yards from slope, to the top split of same vein, and found to be fourteen feet in thickness, in good condition, having 12′ 3″ of good coal, the vein dipping fifty degrees south.

Two bore holes, one 8″ and one 12″ in diameter, were drilled during the year, at the eastern limit of lease, to strike the east Furnace gangway, the intention being to place a steam pump at this point, to pump the water from the new tunnel, north basin workings, in the Buck Mountain vein, direct to the surface. The holes to be used for column and steam pipes, one each, two hundred and fifteen feet long, and diameters as mentioned.

The result of the work was very satisfactory, the holes striking the calculated points.

The breaker was extensively repaired, new rolls and picking tables were added.

Two new boilers 34″×30′ were erected, and blowers for twelve boilers were put in.

Boston Run Colliery.

With the exception of a new set of dirt scrapers, three hundred feet long, being added to the breaker, nothing was done other than general repairing.

Bear Run Colliery.

An airway at breaker No. 32, Seven-Foot vein, west gangway, was driven to surface, total length two hundred and eighty-one yards.

Ninety (90) yards of the airway will be widened out for a plane to work out the upper lifts of the vein.

The plane at breaker No. 10, Buck Mountain vein, old east gangway, was completed during the year, one hundred and sixteen yards long, and is now in good working order, and the gangways east and west are being driven.

In Mammoth vein, bottom split, first lift, west gangway, breaker No. 7 was extended five yards wide from its face as abandoned by former operators, to the water level gangway, and at eighty yards below water level

gangway a counter gangway is now being driven. No other improvements except repairing.

Suffolk Colliery.

The company took possession of this colliery on January 1, 1884, since which time the following improvements have been made:

A tunnel was driven from the Tracey vein, south dip, (on line of the present tunnel,) forty-five yards to the regular Ellangowan basin, striking the same vein with dips fifty degrees north and twenty-nine degrees south. Gangways were then driven on south dip. East and west, the vein generally is eight feet thick and contains six to seven feet of coal.

One 9″×38″ steam pump put in slope.

One 9″×38″ steam pump for washing at breaker.

St. Nicholas Colliery.

One (1) tender engine, 20″ cylinder by 5′ stroke, erected at pump slope; also, frame engine-house, 22½′×35′.

Four (4) new boilers, 34″×30′, with blowers, erected.

Tunnel Ridge Colliery.

A tunnel was driven from the bottom split, new gangway, east side, eleven and one third yards to top split of same vein. The vein was found in fine condition, twenty-three feet in thickness, with 16′ 8″ good coal. Dip, fifty-four degrees northward. Gangways are now being driven east and west.

A new counter gangway was opened on the Skidmore vein at a point where the vein splits, and gangway driven east.

One (1) 9″×38″ steam pump put in slope, with 647′ 6″ cast-iron steam pipe.

Four (4) boilers, 30′×34″, with blowers and all connections complete, with one (1) boiler-iron stack, 30′×34″ diameter, and frame house, 19′×55′, with tin roof, erected.

Elmwood Colliery.

About forty yards from face of bottom split, west gangway, second lift, a tunnel was driven fifteen yards to top split of same vein. No gangways turned.

Breaker No. 17, Seven-Foot vein, second lift, east gangway, was driven up narrow one hundred and thirteen yards to first-lift gangway for airway.

No other improvements, except general repairing.

Mahanoy City Colliery.

Breaker No. 28, Holmes vein, north dip, lower lift, east gangway, is now being driven on a given line, and is up one hundred and eighty-three yards. It may possibly be used for a plane to work the flat coal lying in the basin east.

Four (4) 34″×30′ boilers, with blowers and connections complete, erected.

Frame house for same erected. General repairing done.

North Mahanoy Colliery.

A new counter gangway was opened in Mammoth vein, bottom split, eighty-three yards below water-level, from breaker No. 2, second lift, west gangway, and gangway driven west. The vein is 9′ 7″ thick, with eight feet of good coal, and vein dipping generally twenty-three degrees south.

Breaker No. 58, Mammoth vein, bottom split, water-level, west gangway, was driven through to surface, one hundred and ten yards long, for air-way.

One (1) pair hoisting engines, 16″ cylinder by 32″ stroke, complete, erected at North Seven-Foot slope, with frame engine-house, 24′ × 32′.

One (1) No. 10 Cameron steam pump put in North Seven-Foot slope.

Four (4) boilers, 30′×34″, complete, erected on north side of Schuylkill colliery boilers to supply steam to engines and fan at North Seven-Foot slope.

Frame boiler-house erected. The breaker has been extensively repaired and improved.

Schuylkill Colliery.

A bore-hole, seventy-eight feet long, eight inches in diameter, was drilled from the surface, through rock, to the Buck Mountain vein, for a rope-way from engines and drum on the surface to Underground slope.

One (1) pair Carter & Allen hoisting engines, 14″×34″, erected for underground slope. Considerable cribbing was done at the north side of breaker, improving the ground very much. No other improvements made, except the usual repairs.

Girard Colliery.

A 7″ × 15″ steamp pump has been placed on the water-level gangway, to pump the mine-water from here to the jigs.

A tunnel, seventy and two thirds yards long, has been driven from the Mammoth vein, north dip, to the Buck Mountain vein.

A tunnel, eighty and two thirds yards long, has been driven from the Mammoth vein, south dip, to the Buck Mountain vein.

West Bear Ridge Colliery.

A new gunboat tower, at head of hoisting slope, is under construction.

Two nests of four boilers each have been built south of the breaker. Boilers, 34″ × 30′.

A tunnel, seventy-four yards long, has been driven from the Mammoth vein, south dip, to the Buck Mountain vein.

A tunnel, sixty-six and one third yards long, has been driven from the Mammoth vein, north dip, to the Buck Mountain vein.

Hammond Colliery.

The old fan and fan-engine house have been torn down and replaced by a new 15-foot "Guibal" fan and fan-engine house.

A tunnel, one hundred and twenty-four yards long, has been driven from the top split of the Mammoth vein to the Primrose vein.

Conner Colliery.

A new nest of four boilers has been built just west of the old nests. Boilers, 34″×30′.

Girard Mammoth Colliery.

An additional 9″ × 38″ standard steam pump has been put in place at foot of new hoisting slope.

Ellangowan Colliery.

Two of the large brick boiler stacks having become unsafe, were torn down, and four boiler-iron stacks, 34″ diameter by 30′ long, erected in their place.

The dirt tracks have been changed, so as to use a locomotive instead of mules, and to do away with the trestle over the Philadelphia and Reading railroad tail tracks.

A new frame locomotive-house, 26′×12′×12′ was built on the dirt bank; also, a four-thousand gallon tank was put up, and 520′ of 2″ gas pipe laid to it, to supply locomotive with water.

Three four-thousand gallon tanks and four three-thousand gallon tanks, erected for additional purifying apparatus.

Knickerbocker Colliery.

New hoisting-engine at coal plane completed and now in use. Tracks at foot of coal plane have been pulled up and re-laid on an improved plan.

Three hundred and fifty feet of scraper chain, with eighty-three scrapers, 4″×6″, were put up to carry fuel from breaker to boilers.

A culvert, three hundred and thirty-three feet long, 4′ × 2′, has been built of oak sills and T rails, to carry water away from mouth of water-level drift on Holmes vein.

The office has been moved further away from the railroad, and thoroughly repaired; roofed with sheet-iron.

A new standard Philadelphia and Reading Coal and Iron Company steam-pump, 18″ cylinder, 38″ stroke, 9″ pole, was placed in the slope, and connected with steam and column pipes already in use.

A tunnel, twelve yards long, was driven in the slope workings, from bottom split of Mammoth vein to Skidmore vein.

In the Buck Mountain vein, west water-level gangway, an air-hole, two hundred and seventeen yards long, was driven to the surface, and a counter-schute, eighty-seven yards long, was made, thus opening the east and west-counter gangways.

In the Barry Buck Mountain west gangway an air-hole, one hundred and thirty-five yards long, was driven to surface

Indian Ridge Colliery.

A "bore-hole," one hundred and eighteen feet long and 8″ diameter, with $5\frac{5}{8}$″ wrought-iron casing, packed in cement, for hoisting rope-way for proposed underground slope in top split of Mammoth vein, has been completed; also two lines of 2″ gas pipe, each one hundred and eighteen feet long, have been put in another "bore-hole," $5\frac{5}{8}$″ diameter, which was continued to the Shenandoah City colliery workings. These two lines of pipe are intended for speaking-tube and signal-wire for same proposed slope.

A tunnel, twenty-two yards long, and an air-shaft, seven yards long, have been driven from the Mammoth to the Skidmore veins, near foot of shaft.

Four new dirt-burning boilers, 34″ diameter × 30′ long, have been erected, and a new sheet-iron boiler-house, 56′×21′×10′ high, built over them. The twenty-one old boilers have all been changed to dirt burners.

Four additional 4,000-gallon tanks have been erected for purifying apparatus.

The fan near head of shaft has been removed, the colliery now being ventilated by the new fan at Plank Ridge shaft.

The following improvements have been made in the breaker:

New engine, 9″ cylinder × 24″ stroke, put in to run jigs.

No. 12 Cameron pump, used for coal washing, has been replaced by a Philadelphia and Reading Coal and Iron Company standard steam pump, 18″ cylinder, 38″ stroke, 9″ pole.

Six additional cast-iron slate-picking tables, chutes, telegraphs, etc.

Plank Ridge Colliery.

New sheet-iron boiler-house, 54′×17′×3′, built over the four boilers put up in 1883.

Four new boilers, 30′ long, 34″ diameter, with dirt-burning apparatus complete, and stack 30′ long, 36″ diameter, built in 1884.

Foundations complete for another nest of four boilers.

New frame smith and carpenter-shop, 50′×25′×9′, built.

New frame oil and supply-house, 12′×14′×8′, built.

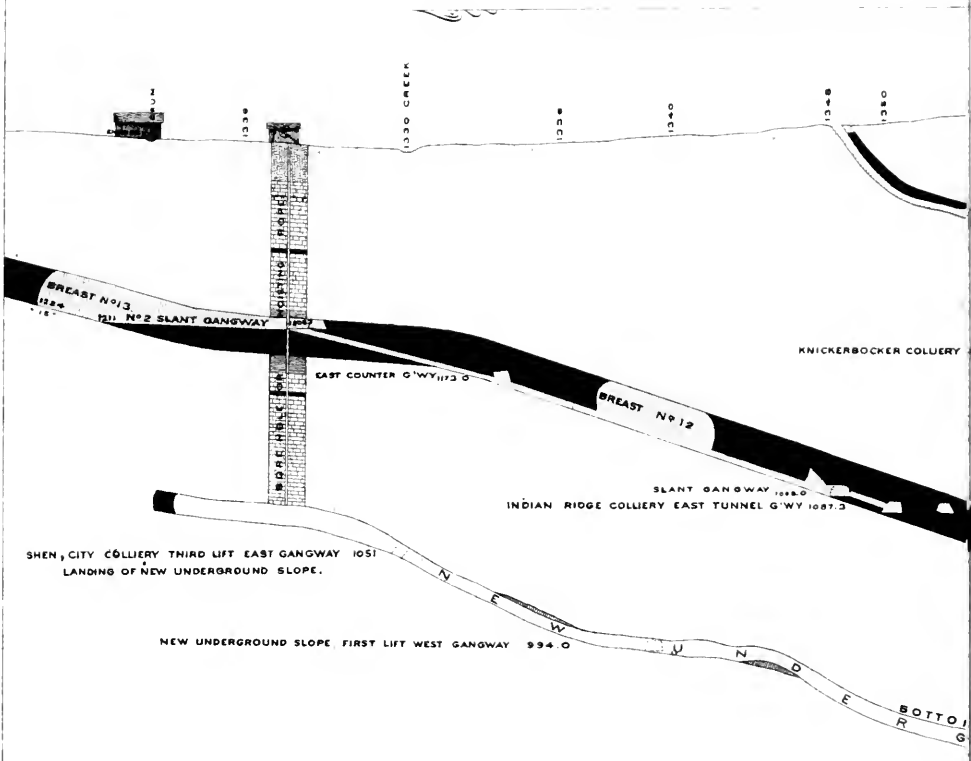
New frame office, 14′×14′×8′, built.

A new air-shaft, 93′ deep, 10′×10′, was driven from surface to Mammoth vein, and a new 18-foot fan erected over it to ventilate Plank Ridge, Indian Ridge, and Shenandoah City collieries.

A tunnel $29\frac{1}{2}$ yards long was driven from the Mammoth to the Skidmore vein in the old slope level.

Shenandoah City Colliery.

The bore-hole for hoisting-rope way for new underground slope has been completed. It is 245′ long, 8″ diameter, and lined with a $5\frac{5}{8}$″ wrought-iron casing, packed with cement. On the surface at top of bore-hole the following improvements have been put up:



CROSS SECTION

THROUGH NEW UNDERGROUND SLOPE AT THE

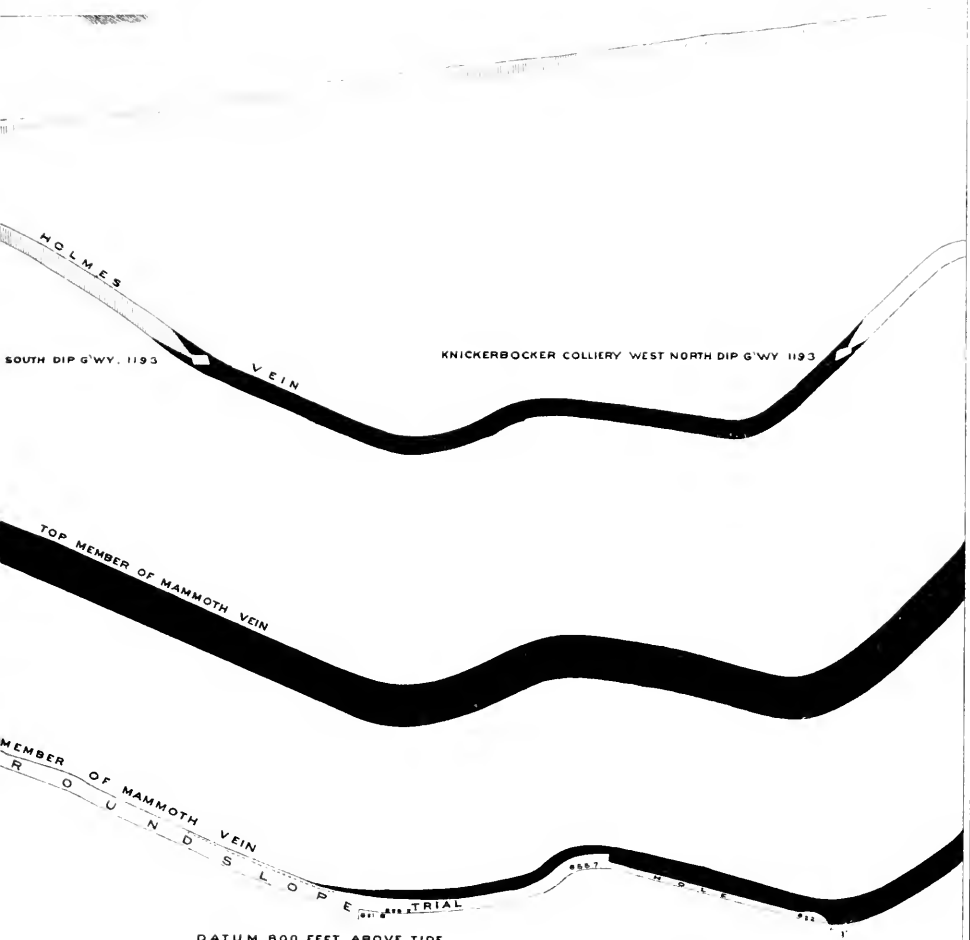
SHENANDOAH CITY COLLIERY

OWNED BY THE

P. & R. C. & I. CO.

SCALE 135 FT. TO 1 INCH.

JOHN H. POLLARD
RESIDENT ENGINEER


HOLMES
VEIN
SOUTH DIP G'WY. 1193
KNICKERBOCKER COLLIERY WEST NORTH DIP G'WY 1193
TOP MEMBER OF MAMMOTH VEIN
MEMBER OF MAMMOTH VEIN
ROUND SLOPE
TRIAL
HOLE
DATUM 800 FEET ABOVE TIDE

Shed over bore-hole, 16′×10′×7′, containing sheave 6′ dia.

Engine-house, 24′×16×9′, with sheet-iron roof, containing one pair hoisting engines 10″ cylinder, 18″ stroke, and a drum 6′ 6″ long, 5′ dia.

Boiler-house, 24′×13′×13′, containing two tubular boilers; one 4,000-gallon tank.

The slope has been sunk 325 yards and a trial-hole continued to the basin, as shown on accompanying section.

Another bore-hole, 245′ long, $5\frac{5}{8}$″ diameter, containing four 2″ gas pipes, two of which stop at Indian Ridge colliery workings, and the other two continue to head of underground slope for speaking-tube and signal-wire.

A tunnel, seven yards long, was driven from the Mammoth vein to the Skidmore vein in the water level drift.

The 8″ Allison & Bannan pump in lower lift was taken out and replaced by a Griscom pump with two 14″ steam cylinders, 48″ stroke, and four working barrels 6″ diameter, 48″ stroke.

The engine at the outside coal plane has been taken out and replaced by a new one built on new foundations.

At this colliery there is a triple breaker, of which one side has not been used for a number of years. This side is now being thoroughly repaired and remodeled, and will be running in a short time.

West Shenandoah Colliery.

A new slush chute, 24′ long, 18′ wide, with four bins 5′ 9″ × 18′ on top, 8′ deep, was built.

The coal plane at breaker is to be replaced by a new one, of which the lumber is all on the ground, all framed ready to put up.

Turkey Run Colliery.

A new air-way and traveling-way, one hundred and twelve yards long, has been completed in the top split of the Mammoth vein from the old slope lower lift, west gangway, to water level east gangway.

Kohinoor Colliery.

In the east slope, No. 2, a No. 4 Blake pump has been put up, run by compressed air.

In the west slope a Philadelphia and Reading Coal and Iron Company standard steam pump, 18″ cylinder, 38″ stroke, 9″ pole, has been put up, run by compressed air.

A fan, 8′ diameter, and an engine, 10″ cylinder, 12″ stroke, run by compressed air, has been placed in position at the tunnel to Seven-Foot vein.

Tunnel driven from Mammoth to Seven-Foot vein, one hundred and twenty-three yards long.

A slope, fifty yards long, called east slope, No. 2, was sunk in the local basin between first lift of east slope No. 1 and the shaft level.

An air-way, two hundred and fifty-two yards long, to air the Seven-Foot workings was made partly through old workings.

The following improvements have been made to the breaker:

Addition built, 40′ × 48′ × 42′ feet high, containing one dirt and slate hopper 19′ × 12′ × 10′ deep, with four cast-iron gates; one slate hopper 10′ × 14′ × 8′ deep, with two cast-iron gates.

Two new sets elevators, each containing eighty buckets, 24″ × 24″.

One new set elevators, each containing one hundred and two buckets, 18″ × 18″.

One buckwheat screen 12′ long, 5′ diameter, with jacket 12′ long, 6′ diameter.

Fifty-seven cast-iron slate picking tables, with chutes, telegraphs, etc.

One thousand three hundred and fifty feet of 2″ gas pipe was laid from a spring on the mountain to tanks near boilers.

Beside the improvements mentioned at the several collieries, all the breakers, buildings, machinery, slopes, shafts, and air-ways have been kept in good repair, and everything necessary to keep the collieries in good running order has beeen done.

Yours respectfully,

JOHN H. POLLARD,
Assistant Engineer.

Transmission of Power.

In the anthracite coal fields it often becomes necessary to sink slopes underground at long distances from the main opening of a colliery in order to reach local basins, or places where the coal is below the main levels. In such cases, the transmission of power becomes a matter of great importance. There are so many objections to the placing of boilers inside of the mines that it is not resorted to in this district. Carrying steam long distances involves great loss by condensation, and air-compressing machinery is expensive. The plan of placing the engines on the surface, and passing the hoisting-rope down a drill-hole, is now in operation at several collieries in the district, and is found to be a great improvement.

Accompanying this report is given a "cross-section," on the line of the new underground slope mentioned in the improvements made at the Shenandoah City colliery of the Philadelphia and Reading Coal and Iron Company, showing the location of the sheave over the top of the bore-hole with the hoisting engines and drum.

The location of the slope was determined, and sinking with mule power commenced, before the bore-hole was started it was, therefore, necessary that the survey locating the top of the bore-hole on the surface should be very accurately made in order that the rope would coincide with the center line of the underground slope. In making this survey it was necessary to start at the apex of the slope, from a point on the slope line, and carry the survey out along the gangway six thousand eight hundred and twenty-one feet, or one and one fourth miles, which required the measuring of seventy-nine different angles and distances. Thence up the main hoisting slope seven hundred and forty-six feet long, on an average dip of 18° 42′, but

undulating from nearly horizontal to thirty degrees, requiring the measuring of six angles and distances, besides the vertical angles necessary to calculate the horizontal distances. Thence from the top of the slope over the surface by the most available routes to a point vertical over the center line of the underground slope, and at sufficient distance from the apex as to allow space between the apex and sheave at the bottom of the bore-hole for the purpose of backswitching the cars on to the turnout. This was a distance of eight thousand seven hundred and ninety-six feet, or nearly one and three fourth miles, which required the measuring of twenty angles and distances, making a total distance of sixteen thousand three hundred and sixty-three feet, or a little over three miles, and a measurement of one hundred and five different angles and distances.

When the bore-hole struck through the top of the breast, it was found to be within (3) *three* inches of the required point.

This result shows to what a degree of proficiency the engineering department of the Philadelphia and Reading Coal and Iron Company has attained.

The surveys and calculations necessary for locating these bore-holes were made by John H. Pollard, resident engineer of the company for the Ashland district, assisted by Rufus J. Foster and W. J. Richards. Such accuracy, when the conditions are considered, reflects great credit on Mr. Pollard and his assistants.

The above data and accompanying drawing were furnished for this report by the courtesy of the Philadelphia and Reading Coal and Iron Company.

REGISTER OF FATAL CASUALTIES, SHENANDOAH DIVISION, FOR THE YEAR 1884.

Number.	Date.	Names.	Collieries.	Occupation.	Age.	Married or single.	Children.	Remarks.
1	Jan. 2	Frank Staley,	Kohinoor, No. 2,	Miner,	23	Single,		Killed; fell down shaft.
2	17	John Holland,	Kohinoor, No. 1,	Door-boy,	15	Single,		Killed; timber fell on him.
3	29	Charles Casper,	Ellangowan,	Miner,	25	Single,		Killed by the premature explosion of a shot.
4	29	Thomas Curley,	Packer, No. 4,	Miner,		Single,		Fatally injured; fell under trip.
5	30	Thomas Guinter,	Lawrence,	Miner,	18	Single,		Fatally injured; caught between cars and door-frame.
6	Feb. 4	Roderick Regan,	Ellangowan,	Door-boy,	14	Single,		Fatally injured; fell under truck.
7	27	Ezekiel DeJackman,	Ellangowan,	Laborer,	24	Single,		Killed by a fall of coal.
8	Mar. 24	Michael Igo,	Coal Run,	Miner,	35	Married,	6	Killed; fell down air-shaft.
9	Apr. 8	Nicholas Mical,	Kohinoor,	Laborer,	22	Single,		Killed by a fall of slate.
10	11	Thomas Welsh,	Packer, No. 3,	Miner,	31	Married,	1	Killed either by after-damp or explosion of gas.
11	15	Martin Cunningham,	Cuyler,	Laborer,		Married,		Killed; found dead in rock-chute; cause unknown.
12	May 17	Thomas H. Marsh,	Connor,	Laborer,	25	Single,		Killed by a fall of top coal.
13	28	Peter Padden,	Hammond,	Miner,	40	Married,	5	Killed by a premature explosion of a blast.
14	29	William J. Price,	Elmwood,	Inside boss,	42	Married,	5	Killed by a fall of top slate.
15	June 4	William Brysen,	Knickerbocker,	Miner,	25	Married,	1	Killed by a fall of top coal in breast.
16	25	Henry Everhard,	Indian Ridge,	Switch-boy,	14	Single,		Fatally injured; fell into the monkey-rolls.
17	27	Adam Weighant,	Kehley Run,	Miner,	40	Married,	3	Killed; shot flew through pillar and struck him on the head.
18	July 11	James Howels,	St. Nicholas,	Miner,	33	Married,	1	Suffocated by rush of coal.
19	23	Peter Ormet,	Lawrence,	Miner,	36	Single,		Fatally burned by an explosion of gas.
20	28	George Zelinsky,	Knickerbocker,	Laborer,	54	Married,		Fatally injured; run down by a car while standing on track.
21	Aug. 1	John Grogan,	Packer, No. 2,	Outside laborer,	22	Single,		Fatally injured; fell from frame of gate and dragged by car.
22	5	Andrew Auckuskie,	Connor,	Miner,	23	Single,		Fatally injured; caught between cars and gangway timber.
23	5	John Lavelle,	Packer, No. 3,	Miner,	30	Married,	1	Fatally injured; fall of coal in breast; died August 6.
24	6	John Bozyan,	Indian Ridge,	Laborer,	19	Single,		Killed by fall of coal in breast.
25	Sep. 18	Thomas Rasley,	Lawrence,	Laborer,	22	Single,		Killed; lagging fell down slope, striking him on the head.
26	19	James Williams,	Lawrence,	Miner,	36	Married,	2	Killed; hitch slipped and rope fouled, dragging him in slope.
27	20	Thomas Sprague,	William Penn,	Miner,	35	Married,	3	Fatally injured by an explosion of shot.
28	22	William Burk,	Turkey Run,	Miner,				Fatally burned; spark of lamp fell into keg of powder.
29	24	David Davis,	Turkey Run,	Miner,	63	Married,	5	Killed; struck by a piece of coal.
30	26	John J. Chadwick,	Hammond,	Outside laborer,	22	Single,		Killed; caught between empty and loaded cars.
31	Oct. 15	Henry Lewis,	St. Nicholas,	Miner,	56	Married,		Fatally injured by fall of top slate in breast.
32	27	George Fishburn,	Packer, No. 4,	Miner,	34	Married,	3	Killed by the bursting of a piece of coal.
33	28	John Ward,	St. Nicholas,	Miner,	40	Married,	3	Killed; jammed in manway by a rush of small coal.
34	28	Thomas Buskies,	Elmwood,	Miner,	23	Single,		Killed by a fall of top coal in breast.
35	Nov. 6	John Jervis,	William Penn,	Miner,	40	Married,	7	Killed by a fall of top coal in breast.
36	6	Anthony Lally,	William Penn,	Miner,	45	Married,	4	Fatally injured by fall of coal from face of breast; died November 12.
37	24	Justin Crabtree,	Plank Ridge,	Miner,	34	Married,	3	Killed by a fall of top coal in breast.
38	29	Peter Zelinskie,	Mahanoy City,	Miner,	28	Single,		Killed by a fall of coal while robbing pillars.

FATAL CASUALTIES, SHENANDOAH DIVISION—Continued.

Number.	Date.	Names.	Collieries.	Occupation.	Age.	Married or single.	Children.	Remarks.
39	Dec. 10	John Kellet, ...	Schuylkill, ...	Miner, ...	41	Married, .	1	Killed; car broke loose, ran back in slope, and struck him.
40	16	James Danling, ...	Turkey Run, . . .	Laborer, . . .	14	Single, . .	. .	Killed by a fall of slate at face of breast.
41	23	John Nugent, ...	Mahanoy Jig House,	Car conductor, .		Single, . .	. .	Fatally injured; foot caught between railroad cars.
42	29	James Cullen, ...	Cuyler, ...	Miner, ...	22	Single,	.	Killed; struck by piece of coal at face of breast.
43	. . . .	John J. Evans, ...	Shenandoah City, . .	Laborer, ...	24	Single, . .		Died from injuries received by a fall of coal.

REGISTER OF NON-FATAL CASUALTIES, SHENANDOAH DIVISION, FOR THE YEAR 1884.

No.	Date.	Names.	Collieries.	Occupation.	Remarks.
1	Jan. 7	Joseph Cobley,	Park, No. 1,	Miner,	Body injured by fall of coal.
2	10	Joseph Boehm,	Gilberton,	Miner,	Burned by an explosion of gas.
3	16	John Webb,	Tunnel Ridge,	Slate-picker,	Skull fractured; fell down stairs in breaker.
4	17	Martin Bolantz,	Draper,	Laborer,	Severely burned by an explosion of powder.
5	24	George N. Becker,	Glendon,	Laborer,	Leg broken while engaged in spragging truck.
6	Feb. 6	Michael Costello,	Bear Run,	Driver,	Bruised about abdomen and hips.
7	7	Daniel Evans,	Stanton,	Miner,	Breast injured; collar fell on him.
8	7	Patrick Murphy,	Stanton,	Miner,	Leg broken by fall of coal.
9	9	Edward Leishman,	Girard,	Bottom man,	Head and body injured; fell under wagon.
10	11	Daniel S. Davis,	Honey Brook, No. 4,	Miner,	Ankle injured by fall of coal.
11	19	William Caufield,	Kohinoor,	Miner,	Leg injured; prop fell on him.
12	25	John Sunn,	Tunnel Ridge,	Repair man,	Back bruised; fell down slope.
13	25	Reese Richards,	East Bear Ridge,	Miner,	Severely bruised by fall of coal.
14	26	Thomas Purcell,	Ellangowan,	Miner,	Leg fractured by fall of coal.
15	27	William Groyther,	Packer, No. 2,	Miner,	Thigh broken by fall of coal.
16	March 3	Nicholas Bolan,	Knickerbocker,	Miner,	Face and hands burned by the explosion of a shot.
17	4	John Licett,	Connor,	Miner,	Arm cut by a piece of coal.
18	5	Michael Circovitch,	Turkey Run,	Miner,	Head cut and arm broken by a fall of coal.
19	5	Jacob Stevens,	Bear Run,	Miner,	Leg broken by a fall of coal.
20	8	Patrick Dunlevy,	Honey Brook, No. 6,	Miner,	Hand burned; fell on burning lamp while driving heading.
21	11	Eli Fenstermacher,	Stanton,	Laborer,	Compound fracture of leg by fall of coal.
22	13	Thomas Jones,	Honey Brook, No. 5,	Slate-picker,	Fingers crushed.
23	13	Frederick Danim,	Kohinoor,	Loader,	Arm broken unloading wire rope.
24	13	Aaron Swartz,	Primrose,	Miner,	Slightly burned by gas.
25	13	Peter Foster,	Primrose,	Miner,	Slightly burned by gas.
26	13	Charles Layman,	Primrose,	Loader,	Slightly burned by gas.
27	20	John Scorro,	Ellangowan,	Miner,	Ribs broken and back injured by fall of rock.
28	22	Robert Silliman,	Park, No. 2,	Pump engineer,	Leg broken; slope timber fell on him.
29	22	John Brown,	Kohinoor,	Driver,	Leg broken by fall of slate.
30	27	Edward O'Donnell,	Indian Ridge,	Repair man,	Injured internally; caught between cars.
31	31	John S. Davis,	Honey Brook, No. 5,	Top man,	Arm fractured; caught between cars and top of slope.
32	April 2	John Rowan,	Packer, No. 4,	Miner,	Skull fractured by fall of coal.
33	4	Adam Sheller,	North Mahanoy,	D. B. boy,	Left arm cut off; run over by cars.
34	7	Patrick Garrah,	Honey Brook, No. 5,	Miner,	Severe scalp wound by fall of coal.
35	8	Bernard Banks,	Mahanoy jig-house,	Jig-boy,	Wrist broken; fell from trough—twenty feet.
36	9	Frank McGlauchlin,	Lawrence,	Loader,	Slightly burned by an explosion of gas.
37	9	Gustavus Kane,	Lawrence,	Loader,	Slightly burned by an explosion of gas.
38	9	Thomas Roach,	Lawrence,	Loader,	Slightly burned by an explosion of gas.
39	11	Martin Brennan,	Packer, No. 3,	Miner,	Face and hands burned by explosion of gas.
40	12	William Steele,	Tunnel Ridge,	Miner,	Small bone of leg broken by fall of coal.
41	12	Michael Noolan,	Hammond,	Miner,	Head cut and chest and arms burned by premature explosion of shot.
42	21	John Evans,	Shenandoah City,	Laborer,	Leg broken and forehead cut; laggins broke and coal fell on him.
43	21	Pedro Orshine,	Turkey Run,	Miner,	Arm broken by fall of coal.
44	21	Thomas Pickering,	Shenandoah City,	Slate-picker,	Arm broken; slipped and fell on chute in breaker.
45	23	Albert Pleager,	Elmwood,	Loader,	Wrist dislocated and toe broken by fall of platform on which he was working.
46	23	Walter Jones,	East Bear Ridge,	Miner,	Chest injured; struck by lever while lifting car on track.

47		26	Benjamin Lewis,	Honey Brook, No. 4,	Bottom man,	Small bones of both legs broken; rope broke; cars ran back and struck him.
48	May	16	John Gustaugcr,	Primrose,	Miner,	Burned on face and hands by an explosion of gas.
49		16	Wendel Domser,	Primrose,	Miner,	Burned on face and hands by an explosion of gas.
50		16	Jacob Kunsie,	Primrose,	Miner,	Burned on face and hands by an explosion of gas.
51		19	James Robinson,	Mahanoy City,	Slate-picker,	Ribs broken; fell on edge of chute.
52		20	Anthony Gibbs,	Kohinoor,	Laborer,	Leg broken; fall of coal.
53		21	Frank Hinkle,	Packer, No. 4,	Miner,	Leg broken; fall of coal.
54		21	George Wisher,	Coal Run,	Miner,	Hips bruised; fall of coal.
55		24	John Lawson,	Draper,	Miner,	Leg fractured; fall of coal.
56		28	John Downey,	Knickerbocker,	Dirt dumper,	Small bones of leg broken; run over by dumper.
57	June	2	John Bayliss,	Honey Brook, No. 1,	Miner,	Foot injured; struck by a piece of coal.
58		7	Michael Rooney,	Park, No. 1,	Miner,	Face and hands burned with powder.
59		16	Michael O'Donnell,	Honey Brook, No. 5,	Miner,	Finger blown off and eye injured; premature explosion of a blast.
60		17	Daniel Hughes,	Draper,	Miner,	Face and hands burned by an explosion of gas.
61		26	Michael Devitt,	Cuyler,	Miner,	Hands burned by an explosion of powder.
62		29	William Thomas,	Girard,	Miner,	Arm blown off, head, face, and body bruised; accidental explosion of blast.
63		29	John Dimsey,	Girard,	Miner,	Body and arms injured; accidental explosion of blast.
64		29	Richard Coadock,	Girard,	Miner,	Body and arms injured; accidental explosion of blast.
65	July	3	James Castles,	Honey Brook,	Miner,	Leg fractured; fall of coal.
66		3	John Ryan,	Schuylkill,	Stable man,	Leg broken; fell off wagon and wheel passed over him.
67		5	Nicholas Folmer,	Kohinoor,	Repair man,	Leg fractured; struck by a piece of coal.
68		8	Thomas Davis,	Draper,	Miner,	Leg broken; fall of coal in breast.
69		8	Peter Nicholas,	William Penn,	Miner,	Arm and breast cut; premature explosion of a blast.
70		8	Ebenezer George,	Stanton,	Timber man,	Slightly burned with gas.
71		9	William Epting,	Kehley Run,	Driver,	Leg broken; fell while getting on moving cars.
72		10	J. J. Brennan,	Suffolk,	Miner,	Head and face cut; fell down manway of breast.
73		11	Peter Barrett,	Packer, No. 2,	Loader,	Injured internally; crushed between car and gangway timber.
74		11	August McClosky,	William Penn,	Loader,	Leg broken; fall of coal.
75		11	John Weber,	St. Nicholas,	Driver,	Arm broken; caught between car and door-frame.
76		15	Michael Kane,	Honey Brook, No. 4,	Miner,	Face, hands, and chest burned; accidental explosion of blast.
77		22	William Egan,	Hammond,	Driver,	Thigh fractured; fell between trip of cars.
78		22	John McAndrews,	Knickerbocker,	Driver,	Hand cut and broken; caught between car and top slate.
79		23	James Williams,	Lawrence,	Miner,	Head and face burned with gas.
80		24	Owen Boyle,	Honey Brook, No. 4,	Miner,	Eye permanently injured; struck by a piece of coal.
81		26	Michael Foley,	Mahanoy City,	Miner,	Foot cut and broken; fall of coal.
82		29	Charles Fitzsimmons,	Suffolk,	Miner,	Collar-bone broken; fall of coal.
83		30	Patrick Brennan,	Glendon,	Miner,	Slightly burned with gas.
84		30	James McGinty,	Glendon,	Miner,	Slightly burned with gas.
85	Aug.	4	Jacob Benedict,	Ellangowan,	Laborer,	Hand mashed; thumb and two fingers taken off; fall of coal.
86		7	Edward Kinney,	Hammond,	Miner,	Collar-bone fractured; fall of coal.
87		8	George Marketon,	Glendon,	Laborer,	Leg broken; fall of coal in gangway.
88		12	John Sobo,	Elmwood,	Door-boy,	Arm crushed and amputated; attempted to get on moving trip.
89		13	Zigman Kynock,	West Shenandoah,	Miner,	Leg broken and body injured; fall of top slate.
90		16	Isaac Timmins,	Stanton,	Engineer,	Arm fractured while in the act of oiling engine.
91		20	Peter Garchock,	Honey Brook, No. 1,	Laborer,	Leg broken by fall of surface at coal stripping.
92		22	John Loohig,	Park, No. 2,	Sawyer,	Two ribs broken; log rolled on him.
93		25	Morris Staw,	Turkey Run,	Driver,	Body injured; crushed between cars and platform.
94		26	Thomas McGinty,	Glendon,	Door-boy,	One arm broken and the other dislocated; attempted to couple cars in motion.
95		28	Jacob Paul,	Packer, No. 4,	Laborer,	Leg broken; fall of coal.
96		29	Peter Sweeney,	Plank Ridge,	Miner,	Leg broken and back injured by a fall of coal.
97	Sept.	19	John Cline,	Park, No. 1,	Loader,	Leg bruised; caught between chute prop and piece of coal.
98		23	William Southron,	Honey Brook, No. 4,	Miner,	Leg broken; fall of coal in breast.
99		23	John Garretty,	Packer, No. 4,	Miner,	Hip and body injured; fall of coal.

REGISTER OF NON-FATAL CASUALTIES—Continued.

No.	DATE.	Names.	Collieries.	Occupation.	Remarks.
100	Sept. 23	John Phillips,	Packer, No. 4,	Bottom man,	Leg broken; piece of coal fell off car and rolled down slope and struck him.
101	24	William Wright,	East Bear Ridge,	Miner,	Spine, chest, and knee injured by a fall of coal.
102	25	William Combs,	Suffolk,	Miner,	Ribs broken, &c., by a fall of coal in breast.
103	25	Thomas Lee,	Kohinoor,	Bottom man,	Compound fracture of arm; slipped and fell on rail.
104	26	Andrew Rebmer,	Boston Run,	Laborer,	Leg broken; timber rolled on him.
105	30	Michael Hinkle,	Packer, No. 2,	Miner,	Slightly burned with gas.
106	30	Abraham Hinkle,	Packer, No. 2,	Miner,	Severely burned with gas.
107	Oct. 7	Thomas Krulm,	Draper,	Loader,	Ankle broken; caught between cage and dummy.
108	17	Evan Morgan,	Glendon,	Miner,	Slightly burned with gas.
109	17	David Jenkins,	Glendon,	Miner,	Severely burned with gas.
110	18	Paul Gallup,	Shenandoah City,	Platform man,	Foot and ankle bruised; fall of coal.
111	20	Henry Martin,	Kohinoor,	Engineer,	Face and arms cut; boiler of locomotive burst.
112	21	William Smith,	Mahanoy City,	Miner,	Leg broken; fall of rock.
113	24	Michael Carduff,	William Penn,	Miner,	Leg broken; caught between two pieces of coal.
114	27	Jacob Watkins,	Primrose,	Inside boss,	Slightly burned with gas.
115	27	Peter Mitchell,	Primrose,	Miner,	Severely burned with gas.
116	27	Benjamin Mitchell,	Primrose,	Miner,	Severely burned with gas.
117	Nov. 7	James Conners,	Suffolk,	Miner,	Leg broken and side bruised by a fall of coal.
118	13	William R. Evans,	Honey Brook, No. 1,	Miner,	Leg broken; piece of slate slid against him.
119	14	John Bodner,	Schuylkill,	Laborer,	Leg broken and back bruised by a fall of coal.
120	15	Valentine Hollenbach,	Glendon,	Miner,	Back injured by a fall of coal.
121	17	Edward Cooper,	Glendon,	Miner,	Back injured by a fall of coal.
122	22	Patrick Hoolihan,	West Bear Ridge,	Bottom man,	Ribs broken; thrown from cage on slope.
123	28	Walter Beddel,	William Penn,	Slate-picker,	Toes mashed in breaker.
124	Dec. 3	William Connors,	Ellangowan,	Miner,	Leg broken; piece of coal struck him.
125	3	William Bendrick,	Bear Run,	Miner,	Leg broken; piece of coal struck him.
126	9	Thomas Hennessy,	Turkey Run,	Miner,	Back and legs injured by a fall of coal.
127	11	John McDonald,	Packer, No. 1,	Laborer,	Body severely injured; caught between cars.
128	15	John Wagner,	Shenandoah City,	Miner,	Leg broken by a fall of coal.
129	15	Thomas McCormick,	Connor,	Door-boy,	Leg fractured; run over by mine car.
130	20	James Kline,	Mahanoy jig-house,	Unloader,	Arm broken and wrist dislocated; caught between cars.
131	31	William Hopkins,	Packer, No. 3,	Miner,	Body injured by a fall of coal.

TABLE SHOWING THE COAL MINED, NUMBER OF ACCIDENTS, SEAMS WORKED, WITH THEIR THICKNESS IN FEET AND GEOLOGICAL NUMBER.

Colliery.	Operator.	Total coal mined.	Seams Worked, Thickness and Number.						Persons Killed and Injured.			
			Primrose.	Holmes.	Mammoth.	Skidmore.	Seven-Foot.	Buck Mountain.	Killed Inside.	Killed outside.	Injured inside.	Injured outside.
			F. I.	F. I.	F. I.	F. I.	F. I.	F. I.				
Girard,	Philadelphia and Reading Coal and Iron Company,	62,824	. .	. .	32 7	. . . .	. . . .	10 5	. .	.	4	
Hammond,	do. do.	101,541	. .	. .	28 3	. . . .	. . .	14 2	1	1	3	
Connor,	do. do.	144,060	. .	. .	. .	. . . .	. . .	12 10	2	. .	2	
Girard Mammoth,	do. do.	70,605	. . .	. . . . .	. .	. . . .		11 2				
West Bear Ridge,	do. do.	47,729	. . .	11 0	36 0	. . .	9 0	12 0	. . .	. . .	2	
East Bear Ridge,	do. do.	58,711	. .	. . .	20 0	. . . .	. . . .	. . . . .	. .	. .	2	
Turkey Run,	do. do.	118,683	. .	. .	50 4	. . . .	. . . .	. . . . .	3	. .	3	1
West Shenandoah,	do. do.	114,157	.	.	49 10	.	9 0	12 0	. .	. .	1	
Kohinoor,	do. do.	129,645	. . .	11 0	45 0	6 0	8 0	. . .	3	. . .	5	2
Shenandoah City,	do. do.	147,620	. . .	. . .	34 7	. .	6 4	9 9	1	. . .	1	2
Plank Ridge,	do. do.	99,492	. . .	. . .	37 0	6 0	7 4	11 2	1	. . .	2	
Indian Ridge,	do. do.	129,492	. . .		37 0	.	7 4	11 2	1	1	1	
Ellangowan,	do. do.	295,079	. .	11 0	34 6	5 0	7 0	12 0	3	.	6	
Knickerbocker,	do. do.	175,830	. .	. .	30 8	7 7	6 0	9 9	1	1	2	1
Stanton,	do. do.	57,111	. .	.	36 0	. . . .	.	10 6	. .	.	4	1
Gilberton,	do. do.	67,993	.		36 0	. .	9 9	10 5	. .	. .	1	
Bear Run,	do. do.	98,910	. .	10 7	45 7	7 9	8 10	14 6	.	. .	2	1
Boston Run,	do. do.	107,480	. .		26 0	3 10	9 4	9 5	.	. .	1	
St. Nicholas,	do. do.	77,912		11 5	38 7	5 0	8 0	11 2	3	.	1	
Suffolk,	do. do.	121,240	5 9	14 3	*	.	.	. . . . .	1	. . .	5	
Tunnel Ridge,	do. do.	84,195	. . .	.	29 1	9 6	8 3	13 6	.	. .	2	1
Elmwood,	do. do.	84,432	. . .		30 8	6 0	7 6	14 11	2	. . .	3	
Mahanoy City,	do. do.	109,352	. . .	15 6	20 7	. . .	. . .	. .	1	. .	2	1
Schuylkill,	do. do.	99,595	. .		. . .			13 10	1	. . .	1	1
North Mahanoy,	do. do.	53,206	. . .		16 5	5 3	7 1	12 4	.	. . .	.	1
Packer, No. 1,	Lehigh Valley Coal Company, ...	39,018		6 0	30 0	. . .	9 0	9 0	.	. . .	.	2
Packer, No. 2,	do. do.	131,881	13 0	12 0	30 0	. .		. . .	. .	1	4	
Packer, No. 3,	do. do.	123,681			40 0	. . . .	12 0	12 6	2	.	1	
Packer, No. 4,	do. do.	210,607	12 0	10 0	40 0	. .	. . .	9 0	2	.	6	
								Wharton.				

TABLE SHOWING THE COAL MINED, NUMBER OF ACCIDENTS, SEAMS WORKED, &c.—Continued.

Colliery.	Operator.	Total coal mined.	Seams Worked, Thickness and Number.						Persons Killed and Injured.			
			Primrose.	Holmes.	Mammoth.	Skidmore.	Seven-Foot.	Buck Mountain.	Killed Inside.	Killed outside.	Injured inside.	Injured outside.
			F. I.	F. I.	F. I.	F. I.	F. I.	F. I.				
Honey Brook, No. 1,	Lehigh and Wilkes-Barre Coal Company,	44,791			40 0			6 9			2	
Honey Brook, No. 4,	do. do.	166,142			45 0			12 0			4	
Honey Brook, No. 5,	do. do.	123,967			32 0			8 0			4	2
Cuyler,	S. M. Heaton & Co.,	131,749						16 0	1	1	2	2
William Penn,	William Penn Coal Company,	235,000		6 0	40 0			7 0	3		4	1
Kehley's Run,	Thomas Coal Company,	115,922			25 0	6 0	5 6	8 0	1		1	
Oak Dale,	E. L. Powel,	11,000		9 0								
Cambridge,	Cambridge Coal Company,	13,363	8 0									
Lawrence,	Lawrence & Brown,	94,599			38 0	5 6			4		4	
South Laurel Ridge,	John A. Dutter,	5,893	7 6	4 0	40 0			10 0				
North Laurel Ridge,	do. do.	17,579						8 0				
Draper,	Oliver Dittson & Co.,	123,013						7 0			5	
					Bottom split.							
Glendon,	J. C. Haydon & Co.,	123,940			4 0	5 0	7 0	12 0			9	
Primrose,	Nevels & Co.,	45,034						8 0			12	
Buck Mountain,	Buck Mountain Coal Company,	1,696						9 6				
Park, No. 1,	Lentz, Lilley & Co.,	94,808			20 0	6 0	5 0	10 0			4	
Park, No. 2,	do. do.											2
Mahanoy jig-house,	Philadelphia and Reading Coal and Iron Company,									1		1
									37	6	118	22
										43		140

*Orchard, 13′ 7″. Diamond, 9′ 5″. Tracey, 8′ 3″.

TABLE No. I.—Philadelphia and Reading Coal and Iron Company—S. B. Whiting, General Manager.

Number.	Colliery.	Location.	Inside.					Outside.				Grand total.	Days worked.	Kegs of powder used.	Tons of coal shipped.
			Number of miners.	Laborers & company men.	Drivers.	Door-boys.	Total inside.	Bosses and mechanics.	Laborers & company men.	Drivers and slate-pickers.	Total outside.				
1	Girard,	Girardville,	59	67	13	4	143	12	48	89	148	292	176½	430	59,268.02
2	Hammond,	"	92	85	12	8	197	10	54	89	153	350	198	2,200	95,794.10
3	Connor,	"	148	16	13	6	183	2	48	81	131	314	196	3,375	135 897.17
4	Girard Mammoth,	Raven Run,	99	37	8	3	147	10	36	70	116	263	192 5	2 775	66,703 03
5	West Bear Ridge,	Mahanoy Plane,	65	42	9	10	126	16	58	54	128	254	181.14	490	45 028 15
6	East Bear Ridge,	"	67	67	14	2	150	8	31	59	98	248	188.15	640	55 388 06
7	Turkey Run,	Shenandoah,	178	39	13	8	238	6	120	54	180	418	197.8	2 650	111 966.08
8	West Shenandoah,	"	112	57	14	9	192	12	69	141	222	414	199.17	2 950	107 696 15
9	Kohinoor,	"	156	131	15	7	309	20	44	114	178	487	192.15	1,475	122 307 08
10	Shenandoah City,	"	143	99	16	9	267	10	50	148	208	475	195 6	3 900	139 265 04
11	Plank Ridge,	"	126	101	21	15	263	10	41	118	169	432	192 11	3,750	93,861 00
12	Indian Ridge,	"	167	86	44	7	304	9	58	173	240	544	192.5	3 200	122.163.07
13	Ellangowan,	Mapledale,	212	57	24	11	404	10	99	207	316	720	197.16	5 275	278 377 01
14	Knickerbocker,	Yatesville,	180	106	8	6	300	16	67	219	302	602	196.6	5 350	165.878 00
15	Stanton,	Gilberton,	52	50	15	4	121	15	56	86	157	278	174.2	140	53 876 00
16	Gilberton,	"	96	63	6	1	166	15	45	80	140	306	197 10	2 500	64.145 12
17	Bear Run,	St. Nicholas,	98	50	11	1	160	10	41	78	129	289	199.10	2,450	93 312.13
18	Boston Run,	"	77	65	10	8	160	9	58	89	156	316	196.14	2,150	101 397.19
19	St. Nicholas,	"	88	39	11	7	145	8	50	65	123	268	189.15	1 875	73,502.05
20	Suffolk,	"	139	78	11	12	240	10	49	95	154	394	181.7	2,975	114 378.10
21	Tunnel Ridge,	Mahanoy City,	97	40	12	6	155	6	95	70	171	326	182 6	1,730	79 430.12
22	Elmwood,	"	75	49	10	4	138	9	39	93	141	279	196.4	1.550	79 653.19
23	Mahanoy City,	"	76	73	20	7	176	13	39	91	143	319	197.9	1,850	103,163.10
24	Schuylkill,	"	105	71	21	5	202	10	51	93	154	356	196 9	2,700	93,958 19
25	North Mahanoy,	"	100	13	9	6	128	8	31	58	97	225	197.13	1,700	50,195.18
	Totals,		2,907	1,581	360	166	5,014	264	1,377	2,514	4,155	9,169	192¼	60,080	2,506,611.13
	Sold and consumed at collieries,														150 396.14
	Total production,														2,657,008.07

TABLE No. 2.—Lehigh Valley Coal Company—Colonel D. P. Brown, Superintendent.

Number.	Collieries.	Location.	Inside					Outside.				Grand total.	Days worked.	Kegs of powder used.	Tons of coal shipped.
			Number of miners.	Laborers, &c.	Drivers.	Door-boys.	Total.	Bosses and mechanics.	Laborers, &c.	Drivers and slate-pickers.	Total.				
1	Packer, No. 1,	Colorado,	55	60	8	3	126	11	53	69	133	259	146.15	1,021	33 806.03
2	Packer, No. 2,	Lost Creek,	87	183	7	3	280	15	58	86	159	439	195		122 755.08
3	Packer, No. 3,	Brownsville,	102	117	19	8	246	12	65	92	169	415	189.18	1.967	117,231.04
4	Packer, No. 4,	Lost Creek,	158	112	12	7	289	6	67	102	175	464	198 50	4 842	201,805.15
	Totals,		402	472	46	21	941	44	243	349	636	1,577	*182½	7,770	475,598.10
	Sold or consumed at collieries,														24,751.10
	Total production,														500,350.00

TABLE No. 3.—Lehigh and Wilkes-Barre Coal Company—J. J. Hollenbeck, Superintendent.

1	Honey Brook, No. 1,	Audenried,	16	39	5	3	63	6	46	49	101	164	167.40	569	35,557.17
2	Honey Brook, No. 4,	Audenried,	98	140	19	6	263	8	36	98	142	405	190.80	2 825	158,078.09
3	Honey Brook, No. 5,	Audenried,	73	118	20	1	245	8	73	86	167	412	188.16	2,213	116,420.03
	Totals,		187	327	44	13	571	22	155	233	410	981	*182⅝	5,607	310,056.09
	Sold or consumed at collieries,														24,785.00
	Total production,														334,841.09

*Average.

TABLE No. 4.—Individual Operations—Shenandoah District.

Number.	COLLIERIES.	Operator.	Superintendent.	Location.	Number of miners.	Laborers and company men.	Drivers.	Door-boys.	Total inside.	Bosses and mechanics.	Laborers and company men.	Drivers and slate-pickers.	Total outside.	Grand total.	Days worked.	Kegs of powder used.	Tons of coal shipped.
1	Cuyler,	S. M. Heaton & Co.,	W. H. Heaton,	Raven Run,	105	15	16	4	140	16	36	92	144	284	237¾	3,000	130 896.00
2	William Penn,	Wm. Penn Coal Co.,	William H. Lewis,	Shaft P. O.,	220	70	30	5	325	38	106	217	361	686	208	4 000	232 000.00
3	Kehley Run,	Thomas Coal Company,	Thomas Baird,	Shenandoah,	93	63	14	10	181	12	50	69	131	311	231¾	3 825	110,288.03
4	Oakdale,	E. L. Powell,	E. L. Powell,	"	16	3	2		21	3	3	4	10	31	220	250	9,850.00
5	Cambridge,	Cambridge Coal Co.,	William James,	"	12	14	2		28	1	4	3	8	36	210	240	12,607.00
6	Lawrence,	Lawrence & Brown,	George L. Brown,	Mahanoy Plane,	58	83	8	5	154	26	42	77	145	299	227¾	568	79,262 09
7	South Laurel Ridge,	John A. Dutter,	John A. Dutter,	Gilberton,	12	3	1		16	3	4	15	22	38	122		5 493.00
8	North Laurel Ridge,	John A. Dutter,	John A. Dutter,	"	10	3	2	1	16	3	5	12	20	36	254	328	17,279.00
9	Draper,	Oliver Dittson & Co.,	E. J. Phillips,	"	104	96	15	10	225	18	41	65	124	349	233	2,666	113,447.18
10	Glendon,	J. C. Haydon & Co.,	Wm. P. Daniels,	Mahanoy City,	140	96	13	11	260	11	37	62	110	370	202½	3 517	113,575 17
11	Primrose,	Nevills & Co.,	James Wynn,	"	31	17	3	2	56	5	41	37	83	139	2 5	1 520	42 485.00
12	Buck Mountain,	Buck Mountain Coal Co.	William Spencer,	"	45	30	2	2	79	27	24	62	113	192	15	800	1,600 00
13	Park, No. 1,	Lentz, Lilly & Co.,	Louis Stockett,	"	111	105	22	9	247	10	48	81	139	386	213	1,778	85,798.09
	Totals,				960	598	130	59	1,747	173	441	786	1,410	3,157	195½	22 492	954 582.16
	Sold or consumed at collieries,																66,017.15
	Total production,																1,020,600.11

*Average.

NAMES OF COLLIERIES IN OPERATION, AND COAL MINED IN SECOND OR SHENANDOAH DIVISION OF MINING DISTRICT OF SCHUYLKILL, FOR THE YEARS 1880, 1881, 1882, 1883, AND 1884.

COLLIERIES.	Operators.	Location.	1880.	1881.	1882.	1883.	1884.
Girard,	Philadelphia and Reading Coal and Iron Co.,	Girardville,	81,894 13	69,567.07	104.647.08	82,624.01	59,268.02
Hammond,	do. do.	do.	70,649.19	95 274.09	93,838.13	117.467.11	95,794.10
Connor,	do. do.	do.	107,995.09	137.251.01	138,293.10	150,534.01	135,897.17
Girard Mammoth,	do. do.	Raven Run,	722.14	11,273.08	17.832.14	78.763.16	66 703.03
West Bear Ridge,	do. do.	Mahanoy Plane,	64,549.03	74, 425.09	69,283.18	72,834.03	45,028.15
East Bear Ridge,	do. do.	do.	64,004.19	63,196 17	65,491.06	86,968.05	55,388.06
Turkey Run,	do. do.	Shenandoah,	88.289.10	114.298.16	127,763.12	124.694 08	111,966.08
West Shenandoah,	do. do.	do.	111,042.11	122.264 09	103,776.13	111,575.09	107,696.15
Kohinoor,	do. do.	do.	159.813 14	175 861.00	162.000.00	187.000.00	122.367.08
Shenandoah City,	do. do.	do.	52,689.00	84,819.11	116,213.09	110 444 02	139,265.04
Plank Ridge,	do. do.	do.	91.740.13	197,195.09	108,257.16	101,984 10	93,861.00
Indian Ridge,	do. do.	do.	118,338.11	143.562 07	144,602.00	145,898.15	122,163.07
Ellangowan,	do. do.	Maple Dale,	187,261.18	240,947 05	244 120 15	302,590.00	278,377.01
Knickerbocker,	do. do.	Yatesville,	100 223.05	113.555.01	92,168.07	129,542 18	165,878 00
Stanton,	do. do.	Gilberton,	62.803.10	57,854.05	68,733.00	97,228.01	53,876 00
Gilberton,	do. do.	do.	13 229.18	52,988.14	77 090.09	72,411.04	64,145.12
Bear Run,	do. do.	St. Nicholas,	30 277 16	19 221 10	43,751.07	74,749.16	93,312.13
Boston Run,	do. do.	do,	67,956.03	46 705 17	80,470.10	80,328.03	101,397.19
St. Nicholas,	do. do.	do.	69,931.09	111,031 10	106,400.05	49,525 05	73,502.05
Suffolk,	do. do.	do.					114 378.10
Tunnel Ridge,	do. do.	Mahanoy City,	3,458.17	74 654.15	70,008.02	91,832.14	79 430 12
Elmwood,	do. do.	do.	7,690.06	282 03	20,841.06	64.161.07	79,653 19
Mahanoy City,	do. do.	do.	98 613.17	114,339.13	113 339 16	122 435 06	103,163.10
Schuylkill,	do. do.	do.	9,266.06	81,925.02	83,972.11	97,916.19	93,958.19
North Mahanoy,	do. do.	do.	89,752.00	71,190.11	52,710.01	56,498.03	50,195.18
Furnace,	do. do.	Gilberton,	35,336.07				
Packer, No. 1,	Lehigh Valley Coal Company,	Colorado,	71,530.14	81,564 00	61.700.00	48,503.13	33,806.03
Packer, No. 2,	do. do.	Lost Creek,	126,224.15	126 510.19	98,434.02	111.659.12	122.755.08
Packer, No. 3,	do. do.	Brownsville,	79.661.18	170,078 11	158,595.10	155 502 05	117,231.04
Packer, No. 4,	do. do.	Lost Creek,	178,713.07	200,682.07	218,127.18	225,406.19	201,805.15
Honey Brook, No. 1,	Lehigh and Wilkes-Barre Coal Company,	Audenried,	80,778.10	81,116.01	51,381 08	40.006.10	35,557.17
Honey Brook, No. 4,	do. do.	do.	110,712.04	164 940 07	163,580.02	198 094.01	158,078.09
Honey Brook, No. 5,	do. do.	do.	124 153 02	124,302.12	108,419 02	133 507 09	116,420.03
Cuyler,	S. M. Heaton & Co.,	Raven Run,	147,152.00	177,954 04	175,349.08	169.020.05	130,896.00
William Penn,	William Penn Coal Company,	Shaft, P. O.,	174,000.00	222,252.09	228 500.00	228 500.00	232 089.00
Kehley Run,	Thomas Coal Company,	Shenandoah,	80,632 02		79.616.00	115,311.01	110,288.03
Oak Dale,	E. L. Powel,	do.	3 896 00	10 000.00	10 000.00	10 000 00	9,850.00
Cambridge,	Cambridge Coal Company,	do.	5,122.00	9,065 12	10,939.00	9 722.10	12,607.00
Lawrence,	Lawrence & Brown,	Mahanoy Plane,	95,381.10	112 200.00	95,368.00	89,335 00	79 262 09
South Laurel Ridge,	John A Dutter,	Gilberton,					5 493 00
North Laurel Ridge,	do.	do.	19,583.00	11,016.00	24,101.09	21.336.04	17,278.00
Draper,	Oliver Dittson & Co.,	do.	87,982.15	117,132.09	114,631.11	109,066.04	113,447.18
Glendon Lehigh,	J. C. Haydon & Co.,	Mahanoy City,	89,506 09	95 481.00	111,436.00	198,012.12	113 575.17
Primrose,	Nevils & Co.,	do.	41,786.06	55,193.02	56,460.00	27 396.00	42 485.00

Buck Mountain,	Buck Mountain Coal Company,	do.	. . .	. . .	. . .	. . .		1,600 00
Park, No. 1,	Lentz, Lilley & Co.,	do.	. .	. .	. .	. . .		85,798 09
Coplay,	L. F. Lentz,	do.	. .	57,026.14	68,777.12	75,958.60	25,788.14	
Staffordshire,	Jones & Oliver,	do.	. .	8,111.19	11,422.01	7,891.03	42,123 14	
West Lehigh,	Fisher Hazzard,	do.	. .	46,269.16	46,757.16	47,665.08	21,661.12	
Webster,	L. S. Baldwin,	do.	. .	15,167.04	24,119.11	25,881.00	11,960.15	
Maunoeth,		do.	. .	156.00				
North Star,	Reynolds & Roberts,	do.	. .	15,413.15	24,000.00	8,465.19		
Hillside,		do.	. .	3,000.00				
Eureka,		do.	. .	6,576.00				
Total shipped to market,			. .	3,543,663.04	4,249,613.68	4,401,884.06	4,579,929.15	4,246,849.08
Consumed and sold at collieries,			. .	210,122.10	254,980.18	259,130.06	274,795.04	265,950.19
Total production,			. .	3,753,785.14	4,504,624.06	4,661,024.12	4,854,724.19	4,512,800.07

COMPARATIVE STATEMENT OF CASUALTIES, TONNAGE, AND EMPLOYEES FOR FIVE YEARS IN SECOND, OR SHENANDOAH DIVISION OF MINING DISTRICT OF SCHUYLKILL.

YEARS.	Killed.	Injured.	Total.	Total number of employés.	Number of employés to each casualty.	Total number of tons of coal mined.	Number of tons of coal mined to each fatal casualty.	Number of tons of coal mined to each non-fatal casualty.	Ratio of tons of coal mined to each casualty.	Number of tons of coal mined to each employé.
1880, ...	39	92	131	11,471	$87\frac{12}{25}$	3,753,785.14	96,250.18	40,802.00	28,654.17	327.04
1881, ...	34	149	183	10,911	$59\frac{114}{183}$	4,504,624.06	132,488.01	30,332.02	24,615.02	412.01
1882, ...	40	167	207	12,361	$59\frac{148}{207}$	4,661,024.12	116,525.02	27,910.01	22,517.00	377.09
1883, ...	47	134	181	13,399	74	4,854,724.19	103,292.00	36,229.00	26,821.10	366.10
1884, ...	43	138	181	14,884	$82\frac{3}{10}$	4,512,800.07	104,948.18	32,701.09 +	24,987.06 —	303.04 +
Total, ...	203	680	883	63,026	363 +	22,286,959.18	553,504.18	167,974.12	127,595.15	1,786.08
Average, ...	$40\frac{3}{5}$	136	$176\frac{3}{5}$	$12,605\frac{1}{5}$	$72\frac{5}{8}$	4,457,391.19 +	110,700.19	33,594.16	25,719.00	357.05 +

THIRD OR SHAMOKIN DISTRICT.

OFFICE OF INSPECTOR OF MINES, SHAMOKIN DISTRICT,
ASHLAND, *April 7, 1885.*

To His Excellency ROBERT E. PATTISON,
Governor of Pennsylvania:

SIR: In compliance with an act of Assembly, entitled "An act providing for the health and safety of persons employed in and about coal mines," approved March 3, 1870, I herewith have the honor of submitting this, my annual report, which contains a list of the persons killed and injured, together with the number of tons of coal mined, number of days worked, number of persons employed in and about the collieries in the district during the year 1884, and such other information as may be deemed important to those employed or interested in the mining and production of coal.

Total number of tons of coal shipped to market,	4,280,487.03
Sold and consumed at collieries,	254,564.10
Total production for year 1884,	4,535,051.13
Total production for year 1883,	4,813,162.12
Decrease under that of year 1883,	278,110.19
Number of employés inside,	9,105
Number of employés outside,	6,463
Total number of employés in district,	15,568
Number of kegs of powder used,	
Average number of days worked during the year,	192½
Number of fatal casualties,	56
Number of non-fatal casualties,	174

Very respectfully,
JAMES RYAN,
Inspector of Coal Mines.

IMPROVEMENTS MADE DURING YEAR.

North Ash and Colliery.

A tunnel, one hundred and seventeen yards long, has been driven south from the Mammoth to the Buck Mountain vein. Also, a tunnel, forty-one feet long, by fourteen feet wide, by seven feet high, has been driven south from Mammoth vein, near bottom of slope, to be used as a pump-room.

Bast Colliery.

A new eighteen (18) foot "Guibal" fan, with engine, &c., has been put in position on airway on Mammoth vein, near breaker, to be used to ventilate the workings of the proposed new lift on the Mammoth vein.

The pump-slope, on the same vein, has been sunk one hundred and nineteen yards during year. Total depth, below the present slope gangways, is two hundred and two yards.

The slope on the Buck Mountain vein has been sunk one hundred and three and two thirds yards. Total depth from surface is three hundred and forty-seven and one third yards.

Tunnel Colliery.

The trestle, or "gunboat," tower, at head of hoisting-slope, with dump-chute, &c., at breaker, has been entirely remodeled and rebuilt. A new nest of four double boilers has been put in place and walled in.

Merriam Colliery.

A new air-hole, one hundred and seventy-four yards long, has been driven in the Skidmore vein from the west-flat counter-gangway to the surface. Also, a tunnel, seventy-nine yards long, has been driven northward from the Mammoth south-east gangway, through a saddle, to same vein in a basin. An air-tunnel, thirteen yards long, has been driven north from the lower west Skidmore gangway, opposite breast 42, into the workings of the lower west Mammoth vein. The screen-rooms of the breaker were entirely remodeled, and supplied with a complete outfit of the new standard cast-iron slate-picking tables and telegraphs, thereby insuring superior preparation of coal for market. The breaker structure was also thoroughly repaired and otherwise improved, and supplied with complete sets of dirt-scrapers and elevators under the lip-screens. The hoisting-tower, one hundred and thirty-six feet high, has also been repaired, as well as the several dirt and other trestles. The entire plant has been greatly improved.

Monitor Colliery.

A tunnel twenty-seven yards long has been driven north from the West Mammoth vein gangway to the Skidmore vein and gangways opened therein.

A No. 5 Blake pump, with a portable 30″×11′ flue boiler, was erected to supply four new pine tanks (2,000 gallons' capacity each) that were also erected during the year to hold a supply of water for the colliery boilers. The trestle from the slope-landing to the breaker-tip was thoroughly overhauled and repaired, together with usual repairs to the breaker and other buildings and machinery maintained.

Locust Spring Colliery.

A new air-hole, one hundred and ninety-six yards long, was driven in the Skidmore vein, and a shaft, eight feet square and fourteen yards deep, sunk from the upper east Mammoth vein gangway to the face of said air-hole, thus ventilating the Skidmore vein workings independent of the Mammoth vein. There was also a new tunnel, nine and one third yards long, driven south from the No. 8 vein west gangway, opposite breast No. 53, to the No. 9 vein.

The usual repairs to all buildings and machinery were maintained.

Locust Gap Colliery.

A tunnel, one hundred and five yards long, has been driven from the west No. 8 vein gangway, under breast No. 10, to the Skidmore vein and a gangway driven therein. There was also an air-hole, one hundred and thirty-eight yards long, driven in the vein, but it has not yet been completed to the surface.

Another tunnel, twenty-seven and a half yards long, has been driven from the west No. 8 vein gangway, opposite breast 89, to the No. 9 vein, and gangways driven therein.

Eight new boilers, and the boiler-house covering them, with all steam and water connections complete, including Wootten patent blowers and two iron stacks, were erected during the year, also a new twelve-foot suction fan, complete, with new casing, &c., and three new slush-tanks to catch the dirt in the slush from the breaker and keep it out of the creek.

A new car-shop and locomotive-house were built; also a new office erected; the timbering and landing of the tender slope greatly improved; the yards south of the slope graded and improved; the usual repairs to the breaker and other buildings and machinery maintained.

Reliance Colliery.

The screen-room of the breaker has been supplied with a complete outfit of the new standard cast-iron slate-picking tables and telegraphs, thereby enabling improved preparation of coal. Four (4) new white pine neutralizing tanks (2,000 gallons' capacity each) and a new boiler have been erected, and the usual repairs to machinery and buildings kept up.

Buck Ridge Colliery.

The breaker has been remodeled and repaired throughout, and supplied with all new machinery, including standard slate-picking tables, telegraphs, dirt elevators, and scrapers, &c., and is now in first-class condition in every respect.

Twelve (12) new 34 in. / 30 ft. boilers, with all steam and water connections, including Wootten patent blowers complete, together with a new boiler-house covering and three new iron stacks, have been erected on the site of the old ones. The foundation of four similar ones are now built, awaiting the arrival of the boilers. Six thousand and sixty-six (6,066) feet of four-inch hautboy pipe have been laid and covered from the Shamokin

Water Company's main pipes to four new white pine tanks, (4,000 gallons, capacity each,) that have been built near the new boilers. A No. 12 Cameron steam pump has been put in position to pump the fresh water to the tanks. The reservoir south of the No. 8 vein slope has also been enlarged and improved.

The No. 9 vein slope has been enlarged and retimbered throughout its entire length, as has also the east No. 8 vein gangway, at the face of which, in a solid pillar, a new air-hole 12 feet wide, 8 feet high, and 267 yards long has been driven, meeting the foot of a new air-shaft sunk from the surface 9 feet square in the clear, and 45 yards deep. Also a number of minor improvements, in the manner of working and ventilating the colliery were made, which included the driving of a new tunnel from the east No. 8 vein gangway $12\frac{1}{4}$ yards long, to the No. 9 vein, which was completed and gangways therein driven.

All of these improvements were within a few days of final completion, when, on the morning of August 20, fire was discovered in the No. 8 vein slope, since which time nothing has been done except extinguishing the fire and driving a cross cut $11\frac{1}{3}$ yards long nearly square through the measures, from the No. 9 slope to the east No. 8 vein water-level gangway.

Peerless Colliery.

A new self-acting plane 209 feet long has been constructed in the No. 10 vein water-level workings. To form a landing therefor a back switch tunnel 9 yards long was driven at the foot thereof.

Considerable grading, &c., has been done with the view of making the landing of the No. 11 vein slope at the level of the water-level gangway of same vein.

Twelve (12) new standard 34 in. × 30 ft. boilers, with all steam and water connections (including Wootten patent blowers) complete, with the new boiler-house covering them and three iron stacks, were erected, as were also three white pine tanks, (4,000 gallons, capacity each.)

Burnside Colliery.

The breaker has been thoroughly repaired and improved, the screen-room refitted similar to those at the Merriam and Reliance collieries. A new twelve-foot fan, "Guibal," with casing and fixtures complete, erected over the south dip slope workings, together with the usual repairs to buildings and machinery maintained.

Bear Valley Shaft Colliery.

A new Philadelphia and Reading Coal and Iron Company 9 in. · 38 in. steam pump with four (4) new standard 34 in. × 30 ft. boilers, with Wootten patent blowers, iron stack, and new boiler house complete, have been erected at the creek north of the breaker to pump fresh water through 1,348 feet of five-inch column pipe to the new 4,000-gallon tank at the breaker.

Four (4) other boilers, similar in every respect to those just mentioned, with stack and boiler house complete, were also erected near the shaft, as were also two new 4,000 gallon neutralizing tanks.

A new eighteen-foot "Guibal" fan, with casing, &c., complete, was also erected, and all the usual repairs both to machinery and buildings kept up.

The fire in the west Mammoth vein in the shaft-level workings, which was supposed to have been extinguished the year before, broke out again last autumn, which it was decided to extinguish this time by boring holes from the surface down into the workings on fire, and silt them full of coal-dirt slush. To carry out this plan, an oil-well derrick, with all the machinery and tools, was erected. A dirt plane 770 feet long, with large bins and trestles at either end was constructed, and a 16 in. × 36 in. hoisting engine connected therewith to hoist the dirt required, and a railroad 2,780 feet long, graded and built, on which to carry the dirt to the holes, and a Philadelphia and Reading Coal and Iron Company 9 in. × 38 in. steam pump, with 1,237 feet of six-inch column pipe erected to wash the dirt into them.

North Franklin, No. 1, Colliery.

A new railroad 1,050 feet long built from the mouth of the No. 8 vein water-level drift at No. 2 colliery to connect with the No. 1 colliery road at No. 2 drift-mouth.

North Franklin, No. 2, Colliery.

A tunnel 61 feet long has been driven from the No. 8 vein to the No. 7 vein, and maintain the usual repairs.

Short Mountain and Lykens Valley Colliery.

Put up one double hoisting-engine, (inside,) 18 in. cylinder, 36 in. stroke, with 11½ ft. drum. Put in place two Allison & Bannan steam-pumps, 38 in. cylinder, 16¼ in. plunger, 6 ft. stroke, at No. 3 level in White's vein.

Drove one hundred and sixty-three and two thirds yards of tunnel and cross-cuts, and sunk No. 4 (inside) slope one hundred and fifty-four yards.

Garfield Colliery.

Built a new breaker, two boiler-houses, offices, dump-chute, trestle for boilers, saw-mill, slope-house, oil-house, blacksmith and carpenter-shops, one double dwelling-house, and stable. Opened up works complete, driving tunnel north to No. 11 vein.

Continental Colliery.

Driven tunnels to Buck Mountain and Holmes veins. Put in place a new steam-tip at breaker; built a new tip-house and trestling to same. Built a new boiler-house; put in place nine new boilers; gave a general overhauling and repairing to ten old ones. Changed the mine track from 4 ft. 8½ in. to 2 ft. 6. in.; provided forty new mine cars to run on the same. Put a speaking-tube in slope; built a new engine-house, (inside;) put a locomotive to haul the dirt out from breaker on dirt-bank, and provided an ambulance to convey injured persons to their homes.

Cameron Colliery.

Have driven three hundred and thirty yards of tunnel, cutting the Nos. 12 and 13 veins in a southern basin from that in which the slope ir sunk in.

Put in place six (6) new boilers. Built a new boiler-house for twenty-eight (28) boilers; made pump-room; put in a new steam-pump; drove a new traveling-way from east slope, No. 2 level. Have driven an air-hole and traveling-way — yards from the No. 9 slope east No. 8 vein gangway to surface.

Luke Fidler Colliery.

Have driven two hundred and fifty yards of tunnel north from the Twin veins towards the Buck Mountain vein, (still driving.) Sunk a new inside slope three hundred and fifty yards on the No. 9 vein, and built a new engine-house inside.

Hickory Ridge Colliery.

A tunnel one hundred yards long has been driven south across the basin from the south to the north dip of the Twin veins. Four (4) new boilers put in place; built a new boiler-house for same. Built eight (8) new blocks of miners' houses.

Royal Oak Colliery.

Remodeled and enlarged the breaker, put in two new coal-screens and dirt-elevators, together with other minor improvements.

Mt. Carmel Colliery.

Sunk a new inside slope in Mammoth vein. Built a new water reservoir to supply colliery boilers with water.

Star Colliery.

Sunk a new slope six hundred feet deep. Built a new dump-chute four hundred feet long to convey coal to breaker.

Nelson Colliery.

Sinking a new shaft; down now about one hundred feet deep.

RECAPITULATION OF FATAL ACCIDENTS.

Falls of coal, roof, etc.,	20
Mine cars and machinery,	10
Premature blasts,	3
Explosions of powder,	2
Suffocated by burning mine fire gases,	7
Suffocated by sudden outbursts of carbureted hydrogen gases and rush of coal,	5
Miscellaneous—underground,	6
Miscellaneous—overground,	3
Total,	56

RECAPITULATION OF NON-FATAL ACCIDENTS.

Falls of coal, roof, etc.,	55
Mine cars and machinery,	36
Explosions of carbureted hydrogen gas,	18

Explosions of powder,	5
Premature blasts,	6
Miscellaneous—underground,	33
Miscellaneous—overground,	17
Total,	175

Falls of Roof and Coal.

Accident No. 1.—Patrick Harley, miner, and Michael Naughten, laborer, killed in Big Mine Run colliery, February 5, 1884. Deceased, at time of accident, were robbing out one of the plane east gangways. Harley was up at working face, Naughten was a short distance behind him putting coal down to loader. Without giving any previous notice a large slip of coal fell, killing both men. Harley was an old and experienced miner, and considered a very careful man.

Accident No. 2.—Lawrence Thompson, laborer, killed in Short Mountain and Lykens Valley colliery, by a fall of top rock, on February 15, 1884. Deceased and his brother, Josiah, at time of accident, were working in a breast of Short Mountain drift. They fired a blast in the top coal, and in about three quarters of an hour after while Josiah was barring up some bottom coal, deceased was near by putting coal into chute, when a piece of top rock fell, killing deceased instantly.

Accident No. 3.—Charles Yacoboskie, miner, killed in Enterprise colliery, by a fall of top coal, on March 20, 1884. Yacoboskie and Charles Bilda, laborer, were working by night driving a gangway, known as "Simmons'." They went in to work about six o'clock, P. M., after having the first car loaded, deceased, while barring down coal, the fall took place, which killed him. In my examination of the place after accident, I saw that the coal was of a very slippery, dangerous character, and required the knowledge and care of a competent miner, which the condition of the place showed the deceased was not.

Accident No. 4.—Charles Knauss, fan boy, killed by a fall of top slate in Williamstown colliery, on March 27, 1884. By the evidence elicited at inquest deceased was employed as fan boy for the men driving chutes and headings in east counter gangway, No. 4 slope. He left his place of work and went in to gangway face and commenced to drill a hole which the drill was in. He had been drilling but a short time when a piece of top slate, which was over him, gave a crack, and fell, killing him instantly.

Accident No. 5.—Thomas Harper, miner, killed by a fall of top rock in Excelsior colliery, on April 12, 1884. Deceased, with another man, Frank Glassy, laborer, was employed driving the upper west gangway of slope. About three o'clock, P. M., they fired a blast, which knocked out the two sets of timber next to gangway face. They first stood the set next to face, and were making preparations to stand the other set, when a large piece of top rock, which they were working under, fell and killed deceased.

Accident No. 6.—Paul Covelenskio, laborer, killed by a fall of bone and

slate in Excelsior colliery, on April 16, 1884. According to the evidence given, deceased, at time of accident, was working in a breast with a miner, Joseph Mormaluskie. After fruitless efforts to bar it down they concluded it would not fall. In a short time after, however, it fell on deceased, and killed him instantly. In my inspection of the place and examination of Mormaluskie, I found incompetency, together with carelessness, to be the cause of the accident.

ACCIDENT No. 7.—John Gress, laborer, killed by a fall of rock in Williamstown colliery, on May 8, 1884. Deceased was working with Edward Routzen, miner, driving the lower west gangway of No. 4 slope. They both were boring a hole in bottom slate on high side with a boring-machine, when the top rock over them gave a crack, and fell on deceased, killing him instantly.

ACCIDENT No. 8.—Anthony Lawrence, miner, killed by a fall of top slate, in Pennsylvania colliery, on June 5, 1884. Lawrence and another miner, named John Francis, were starting a new breast on one of the inside slant gangways of lower west gangway of No. 1 slope; on same day, previous to accident, they tried to bar it down but failed; they concluded it would not fall that day, but before the day's work was finished it fell on deceased and killed him.

ACCIDENT No. 9.—Herman Sevinskie, laborer, died of injuries received on same day by a fall of top rock in Excelsior colliery, on August 25, 1884. At time of accident, deceased was working with his step-father in a breast in No. 8 vein in the Tunnel drift. Previous to its falling, they tried to bar it down, but could not, after which they loaded a car and ate their dinners. They then concluded that one of them should sink a prop-hole while the other could work at face of breast. The older Sevinskie went to work at face while deceased was sinking the prop-hole; he had not been long sinking the hole when the top, without giving any notice, fell on deceased, inflicting such injuries as to cause his death in about four hours after accident.

ACCIDENT No. 10.—Charles Hafer, miner, killed by a fall of top coal and bone in Monitor colliery on October 28, 1884. Deceased and another miner, named Frank Bohl, were working in a breast in the upper west gangway. After going in to work in the morning, Bohl stopped down on platform at gangway, putting a cotton in his lamp, deceased took a pick and drill with him up to face of breast; after being up at face he struck the coal a couple of strokes, with either the pick or drill, when the bottom rolled out and top fell, killing him almost instantly.

ACCIDENT No. 11.—Thomas Jones, miner, died on October 19, 1884, from injuries received two days previous by a fall of rock in Merriam colliery. Deceased, at time of accident, was working by night driving the East Mammoth vein gangway. About half past three o'clock in the morning, while sitting at gangway face and under a slate, looking at his two laborers loading a car, the slate, which had a slip or parting in it without giving any previous warning, fell on him, inflicting injuries of such a nature as to cause his death in the time above stated.

Accident No. 12.—James Rowley, miner, was killed by a fall of top slate in Stirling colliery, October 28, 1884. At time of accident, deceased and his son Michael were robbing the lower East No. 8 vein gangway; they were in the act of loading a car, deceased was cleaning the road, when a piece of top slate about ten and a half feet long, seven and a half feet wide by four inches thick, without giving any previous warning, fell on deceased, killing him instantly.

Accident No. 13.—John Burke, miner, died November 12, 1884, from injuries received by a fall of coal in Locust Gap colliery on the 15th of the month previous. Deceased was working by night, robbing the east gangway Mammoth vein at time of accident; he was standing on the gangway partly under a collar when the coal fell, striking him and fracturing his collar-bone, together with a compound complicated fracture of the right leg above the ankle-joint, which, according to the testimony of the resident surgeon of the Miners' Hospital, necessitated the amputation of the limb about three or four inches above the ankle-joint; he died, however, on day named of the injuries received.

Accident No. 14.—James Monahan, miner, killed by a fall of top rock in Big Mine Run colliery, November 14, 1884. Deceased and another miner, named James Mulhearn, were robbing pillars. At time of accident, Monahan was pushing coal down chute on sheet-iron when the top rock fell and killed him.

Accident No. 15.—Emanuel Sheaffer, miner, killed by a fall of top coal in West Brookside colliery, November 21, 1884. At time of accident, deceased and another man, named Abe Adams, were working in a breast in gangway No. 4, No. 3 slope. They drilled a hole, charged and fired it, but it blew the tamping. They reloaded and fired it a second time with the same result. Anxious to know what it had done, deceased ran up to face, and while there the top coal gave a crack. A lump between three and four hundred pounds fell on him, killing him instantly.

Accident No. 16.—Thomas Gallagher, miner, died November 26, 1884, from injuries received seven days previous by a fall of coal in Hazle Dell colliery. At time of accident, deceased and another miner, named Charles McGuire, were working in breast No. 16 of the lower west gangway. About eleven o'clock, A. M., they had drilled two holes at face. An empty trip of cars was brought in, one of which was left at the chute to be loaded. The loader called to deceased and McGuire for one of them to come down to break some large coal that was in chute preparatory to loading the car. McGuire went down while deceased was preparing two cartridges of powder, one for each hole. While McGuire was breaking the coal, deceased tamped both holes and fired one first. In going away, after lighting the second, a piece of top coal, which was loosened by the first, fell on him, inflicting injuries of such a character as to cause his death in seven days after accident.

Accident No. 17.—Lawrence Barret, miner, killed by a fall of coal in Centralia colliery, December 2, 1884. Deceased and another miner, named

John Ryan, were robbing pillars in west gangway. After going into work on morning of accident, deceased got a drill and commenced to drill a hole. The bench of coal over him, having a slip or parting in it without giving any previous warning by cracking or working, fell on him and killed him instantly.

ACCIDENT No. 18.—James Duguit, miner, killed by a fall of top coal, in Stirling colliery, December 16, 1884. Deceased and his brother, Alexander, were skipping pillars in lower lift, east No. 9 vein. Between four and five o'clock in the afternoon on day of accident, while Alexander was down at gangway loading a car, deceased putting down coal to him, a large piece of top coal, which was hanging on pillar side, fell on deceased, broke his neck, killing him instantly.

ACCIDENT No. 19.—Albert Spartzer, miner, killed by a fall of slate in Big Mountain colliery, December 20, 1884. At time of accident deceased and another miner, named Joseph Piker, were starting a new breast, off west No. 8 (straight) vein gangway. Between two and three o'clock in the afternoon, after having fired a blast, Piker was breaking a lump of coal with a pick, deceased standing near by, when a large piece of slate, which he was standing under, fell, covering and killing him instantly.

Mine Cars and Machinery.

ACCIDENT No. 1.—James Smith and Michael Mulroy, timbermen, killed in Tunnel colliery, February 6, 1884. These men were employed timbering by night. At time of accident, they were on their way home, riding up the pump-slope in a car. Mulroy and William Stitzer, laborer, were down near back end, Smith in front with a hold on the spreader chain. When up the slope about twenty yards, the car made a jump off the track and continued jumping through the sills up the slope, a distance of about twenty-five or thirty yards, throwing deceased down the slope. Stitzer saved himself by jumping off. When found at bottom of slope, one was lying west of west rail of slope-road, the other was lying partly on east rail and behind where the car stands at slope bottom.

ACCIDENT No. 2.—John Danko, slate-picker, seriously injured on February 25, 1884, in Reliance colliery breaker, by being crushed between counter-screen and frame, receiving injuries from which he died shortly after. Deceased was employed picking slate at counter-screen; feeling cold, he got a piece of sheet-iron to cover a hole which was on side of breaker near where he was sitting. In his efforts to cover the hole with the piece of sheet-iron, he fell in between the counter-screen and the frame, receiving injuries which caused his death in about three quarters of an hour after.

ACCIDENT No. 3.—Anthony Yarigan, laborer, killed by being struck with a loaded mine car at bottom of Centralia colliery slope, March 19, 1884. Deceased, at time of accident, was coming out Back-switch tunnel, at bottom of slope, while two loaded cars were being hoisted up the slope. When up about twenty yards from bottom, the center hitching bolt of first

car broke, the cars descending back down the slope, striking and killing deceased.

Accident No. 4.—Henry Keller, driver, killed by being crushed between empty mine-cars and gangway low side leg, in North Ashland colliery, on May 13, 1884. About four o'clock in the afternoon, deceased was taking a trip of three empty mine-cars in lower east gangway to be loaded. Before arriving at the point of destination, the mules refused pulling. Christian Schaum and Thomas Ennis, inside foreman and loader boss respectively, who were near by with two other men, named James Ennis and Charles Gallagher, went to help deceased to start the mules off with the cars. After they got the mules started off with the cars, Thomas Ennis was walking in the gangway, on low side, alongside of the third or last mule, deceased behind him. Ennis, hearing a crash, looked back and saw deceased falling after being crushed between the side of front car and gangway-leg, which was leaning out—caused by a squeeze. When Ennis went back, deceased was bleeding out of mouth, and nose, and ears. He died shortly after.

Accident No. 5.—Charles M. Snyder, laborer, died on July 20, 1884, from injuries received in West Brookside colliery, eight days previous, by being crushed between loaded and empty mine-cars. This accident occurred at the tunnel level of No. 3 slope. The empty cars are hauled in tunnel level to and the loaded ones are hauled out from this point preparatory to being lowered and hoisted. The empty cars are hoisted from turnout on this level, up slope to a certain point, to admit of turning a switch before being lowered down slope. The number of cars lowered and hoisted at one time vary from three to six. On this occasion there were six attached to the rope. The engineer hoisted three of them up far enough to admit of turning the switch; he, however, without getting the signal to lower, reversed his engine, letting them back against loaded cars on turnout, from where they were hoisted, crushing deceased, who was standing on high side with his right leg in front of loaded cars, inflicting injuries which caused his death at the time above stated.

Accident No. 6.—Thomas Stanton, miner, killed in East colliery by being crushed between top of mine-car and slope-timber, July 26, 1884. Deceased and two other men, named John Wilson and James McDonald, were employed by night timbering. On coming out to bottom of pump-slope, after having their shift worked preparatory to being hoisted, Wilson and deceased got on a car which was used for lowering and hoisting the men. McDonald signaled to the engineer to hoist. As the car was being started from the bottom, he jumped on. In passing up from bottom and under some low collars, deceased's head was caught between the top of the car and one of the low collars, crushing his head, breaking his neck, and killing him instantly.

Accident No. 7.—Michael Grant, slate-picker boss, killed in East colliery breaker by being crushed in counter screen cog-wheels on August 26,

1884. This accident occurred about eight o'clock, A. M. When found, he was lying on his back dead, his body caught in the cogs, and his clothes twisted around the cog-wheel shaft.

ACCIDENT No. 8.—Joseph Quigley, loader, died of injuries received by being crushed between top of loaded mine cars and chute, in Bellmore colliery, on September 15, 1884. Deceased, after loading two cars at inside chute of breast, No. 20, in West Skidmore vein, stood on the high side bumper of the last car. The driver, who was bringing two loaded cars with his out the gangway, before bumping his, hallowed to decease to "look out." Unmindful of the danger, he stood where he was until the cars bumped, moving them outwards, striking his head against the chute, and throwing him back over the car behind him, crushing him between top of car and chute, inflicting injuries of such a nature as to cause his death in about five hours after receiving them.

ACCIDENT No. 9.—William Davis, driver, died of injuries received by being crushed between mine cars in Keystone colliery, November 22, 1884. By the evidence given at inquest, there were two drivers driving at this (west) side, namely: Charles Moyer and deceased. On morning of accident Moyer went first with his mules, empty, (there being loaded cars inside on gangway after the night shift,) deceased following him with an empty trip of cars. A boy by the name of George Hughes, whose duty it was to fix the tongues for the loaded track, after the empty trips passed in, was detained outside, on top, waiting for oil. Consequently, deceased's loaded trip, on coming on turnout, ran down the empty track, crushing him between the empty and loaded cars, inflicting injuries from which he died in about eleven hours after receiving them.

Suffocated by Sudden Outbursts of Carbureted Hydrogen Gas and Rush of Coal.

ACCIDENT No. 1.—George Story, miner, suffocated by a sudden outburst of carbureted hydrogen gas and rush of coal in Tunnel colliery, May 30, 1884. At time of accident, deceased and another miner, named Henry Gill, were employed driving chutes and headings in west gangway, Gill in the outside and deceased in the inside chute. About nine (9) o'clock, A. M., a rush of coal from face took place, caused by a sudden outburst of carbureted hydrogen gas, which suffocated deceased before he was extricated. In about nine (9) hours after accident, and after forty-five (45) cars of coal and dirt were loaded, deceased was found at outside rib of chute, about twenty (20) feet from gangway.

ACCIDENT No. 2.—By which Joseph C. Duceman, John Fox, Peter Koble, and Richard Tucket, miners, were suffocated in Henry Clay, No. 1, colliery, December 8, 1884. At time of accident, these men were working in breasts Nos. 15, 16, and 17, No. 8 vein, west gangway of west inside slope. Duceman and Koble in 15, Fox in 16, Tucket and another man, by the name of Isaac Davis, who escaped, worked in 17. According to the evidence of Hiram Sawler, miner, who was working in the gangway, who testified: "My butty, Oliver Snyder, and I were tamping a hole; we had

it about half tamped when we heard coal running. I said to him, 'Somebody cut a feeder of gas, we better go.' When we got out the gangway as far as No. 16 breast the gas exploded, the concussion of which blew our safety-lamp lights out. We went out as far as the tunnel, where we got light. I sent Snyder for Benjamin Lawrence (the fire boss) who was in the No. 9 vein, west gangway. I went in the No. 8 gangway again as far as breast No. 14, was going to go up the chute to call the men, when the gas put out my light. I went out to the tunnel, in the dark, a second time for a light, when I met Benjamin Lawrence, Thomas Jones, and James Argast. After I got a light we went in as far as between breasts Nos. 16 and 17, but could not stand the foul atmosphere. We had to go out the gangway as far as between breasts 13 and 14 to get some fresh air. After being there awhile we went in again. The air was moving the gas. We, with others, worked there until all the men were gotten out."

In about two hours after accident, Tucket was found in inside manway of breast No. 16. Inside of manhole door Duceman was found in about half an hour after Tucket in his (Duceman's) manway, but was not gotten out until five (5) o'clock next morning. There were fifty-two (52) cars loaded before he was gotten out. Koble was found and gotten out in about three hours after Duceman. He (Koble) was lying on his face in crosshead ing next to face, and between breasts 16 and 17. Fox was found in about half an hour after Koble in his own (16) breast among the loose coal, about twenty-three feet down from face of his breast. They were all more or less burned by the explosion with the exception of Koble. The explosion did not touch him.

Suffocated by Gas from Mine Fire.

Accident No. 1.—William Clark, William Taylor, William Carroll, and Patrick Haley, miners; William Shankweiler, laborer; George Betz and Robert White, night engineers, suffocated in Greenback colliery on August 20, 1884, by gas from mine fire in Buck Ridge colliery. On the morning of the above date, the latter colliery was discovered to be on fire. Prompt measures were taken to close all openings to the surface, so as to confine it within its then present limits as much as possible. Later in the same day, the Greenback colliery was taken possession of by the Philadelphia and Reading Coal and Iron Company. Immediately thereafter, it was decided to drive a hole from the face of the Greenback colliery lower lift No. 8 vein, west gangway, across the line pillar (between both collieries) into the Buck Ridge colliery, for the purpose of flooding and extinguishing the fire. Nine men were selected to drive the hole, viz: William Clark, William Taylor, William Shankweiler, William Carroll, Patrick Haley, Dennis Burns, John Strausser, Peter Strausser, and Charles Taylor. The three former went down at three o'clock in the afternoon to drive the hole, and were relieved by Carroll and Haley at eleven o'clock that night. (Burns was not with them.) That was the last seen of them until they were found dead. About half-past six o'clock on morning after, Peter

Welter, (stable-boss,) while going down the slope on an empty car to feed the mules, saw two men lying dead in the slope. Being almost overcome with the gas, and seeing what he did, he got off the car, came back up the slope, and reported what he had seen and how he felt. Shortly after, it was discovered that the gas from the Buck Ridge colliery mine fire had escaped into the Greenback colliery through the old water-level workings, (both colliery workings being connected at that point,) and suffocated the men. Measures were at once adopted to remove the gas and get the men out of the mine. On Friday, the 22d, between one and two o'clock in the afternoon, the exploring of the mine in search of the men began, shortly after which the first man, William Clark, was found. About five o'clock on morning of the 23d, the last two men, William Carroll and Patrick Haley, were brought out of the mine. William Clark and William Taylor were found in the slope; Shankweiler was found in the traveling-way, between the old lift and the water-level drift. The boy White was found lying on a bench in his pump engine-house at old lift. Betz, the other night engineer, was found at slope bottom under the bell wire. Carroll and Haley were found on gangway, a short distance out from face where they were to drive the hole. Carroll was lying about three yards outside of Haley.

Premature Blasts.

ACCIDENT No. 1.—Thomas Philips, miner, was killed by the premature explosion of two blasts in Bellmore colliery on June 20, 1884. At time of accident deceased was working by night, driving the Skidmore east-gangway air-course from inside cross-hole outward, to meet other men who were driving in towards him. About half past eleven, P. M., John Crawford, one of the men driving the air-course in towards deceased, went in to see how he was getting on. He, deceased, had a hole drilled at face about three and a half feet deep and was drilling another on low side to clear the cut. He told Crawford that he intended to fire both holes together. After conversing awhile with deceased, he, Crawford, went to his work; shortly after he heard both blasts go almost together. About half past five o'clock, next morning, when deceased was found dead by David Stitzer, night-boss, he was lying on his back, his head in towards face, feet out towards cross-hole; he was about six feet out from face and about twelve feet in from cross-hole.

ACCIDENT No. 2.—Samuel Grego, miner, died August 7, 1884, from injuries received five days previous, by a premature blast in Luke Fidler colliery. At time of accident, was working in breast No. 13 of the west gangway, No. 10 vein, down in slope. After tamping a hole and lighting the match, while on his way to the cross-heading, the blast exploded, some of the coal striking and injuring him to such an extent as to cause his death in five days after accident.

ACCIDENT No. 3.—Andrew Yellen, miner, died October 2, 1884, from injuries received on same day, by a premature blast in Cameron colliery.

Deceased and another miner, named Wentzel Horn, were working in a breast in No. 8 vein, east side No. 9 slope level. About half past three o'clock, P. M., deceased drilled and tamped a hole over the top of his manway. After lighting the match, while going down to cross-heading, the blast exploded, throwing coal down the manway, striking and injuring him to such an extent as to cause his death in about eight hours after accident.

Explosion of Powder.

ACCIDENT No. 1.—Joseph Matlewiez and Thomas Bernoskie, laborers, were fatally injured by an explosion of power, in Pennsylvania colliery, on April 26. Matlewiez died on May 2, 1884, and Bernoskie in two days after. These two men were sitting in a crsss-heading smoking a pipe. He emptied the fire out of the pipe on the top of a powder keg which was nearly full, the aperture on top to empty the powder out being open. In his efforts, after refilling the pipe, to pick up the fire off top of keg a spark fell into it, which exploded the powder, burning both men, and inflicting injuries which caused their deaths at the time above stated.

Miscellaneous Inside.

ACCIDENT No. 1.—Henry C. Hoffman, killed by a rush of coal while starting a battery in Lykens Valley colliery, April 8, 1884. Deceased at time of accident was starting the coal in battery of breast No. 170, in east No. 1 counter gangway. The coal, after being started, in running down the chute struck and knocked out one of the side legs of a set of chute timber. The collar, in falling, struck and knocked him down. The coal, in running down, covered him. When extricated therefrom life was extinct.

ACCIDENT No. 2.—James Laughlin, starter, killed in Potts colliery, on April 24, 1884, while starting coal inside of battery of breast No. 61, east gangway. By the evidence given deceased was inside of battery starting the coal, when it made a rush, catching him against the center leg of battery, killing him instantly.

ACCIDENT No. 3.—Richard Holihan, miner, killed by a turnout collar falling on him, in Continental colliery, May 2, 1884. Deceased with eight other men, was standing a set of turnout timber. They had one end of collar on the high side leg, the other end resting on a prop about three feet nine inches long, preparatory to lifting it on low side leg. Deceased, while putting a piece of plank between the coal at face and collar, it fell, catching his head against the bottom, and killing him instantly.

ACCIDENT No. 4.—Henry Haupt, miner, killed by being struck by coal from a blast in Burnside colliery, July 23, 1884. At time of accident, deceased and another miner, named John Gottshal, were working in breast No. 24, east gangway, south dip slope. Two other men, named Armanaverage and Tomaskie, were working in breast No. 23. The two latter men had a cross-heading nearly driven through into No. 24. They drilled and tamped a hole in the cross-heading to blow it through into No. 24. Before lighting the match one of them went down to the next cross-heading to tell

Gottshal and deceased that they were going to fire in the heading. Deceased and his butty went down to next cross-heading in inside pillar of breast. They were in the heading but a short time when they heard a blast which was fired in the underlaying vein (No. 8). Mistaking it to be the blast in the cross-heading, they went up to face of their breast, and just got there when the blast in the cross-heading exploded, blowing through into their breast, the coal from which struck deceased and killed him instantly.

ACCIDENT No. 5.—Clifford Daubert, laborer, killed in Cameron colliery, August 20, 1884, by being struck with coal flying from blast. On day of accident, deceased was working with a miner named John Henning, in breast No. 21, of west gangway, No. 6 vein on No. 9 slope level. Two brothers, named Alfred and Charles Wilson, were working in the breast next inside. Some days previous to accident Henning and his butty drove a cross-heading through pillar between their breast and Wilson's, so that the latter's breast would hole into it when driven up far enough. The day previous to accident there were four holes drilled by the Wilsons in their breast for next day. The day after Charles Wilson was not out to work. Albert charged and tamped the hole, after which he rapped to deceased and his butty, but got no answer. He then lit the match, the blast exploded, and blew into cross-heading, killing deceased, who, with his butty, was sitting in it at the time.

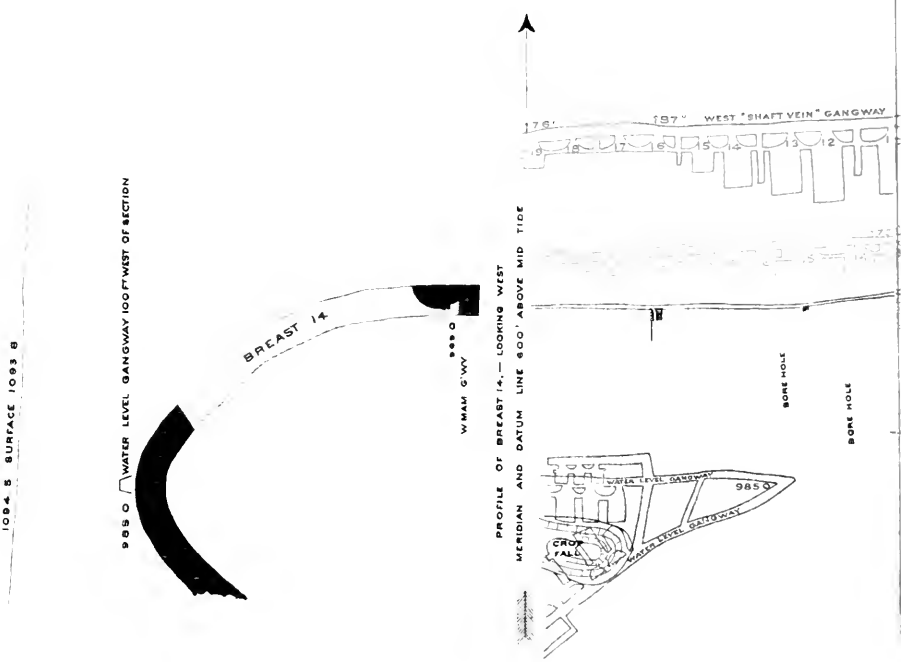
ACCIDENT No. 6.—Thomas Gallis, laborer, killed by a rush of coal in Enterprise colliery, September 27, 1884. At time of accident deceased was working with a miner named James Williams in breast No. 2, in west gangway, No. 9 vein, north dip. While deceased was punching some loose coal which they had fired a blast in, it started down the pitch, which was about forty degrees, a large lump of coal catching deceased against the top, killing him instantly.

Miscellaneous Outside.

ACCIDENT No. 1.—Emanuel Teece, slate-picker, suffocated in pea-coal chute of Williamstown colliery breaker on January 29, 1884. This accident occurred about half past five o'clock, P. M. Deceased slid down a narrow chute called the "telegraph" in pea-coal chute to bottom. The big railroad car-loader raised the pea-coal chute gate to load a car of pea coal, in the loading of which deceased was drawn down through the pea coal, and suffocated before he was gotten out therefrom.

ACCIDENT No. 2.—Frederick Dillman, hoisting slope engineer. Roasted to death in steam boiler flue, at Keystone colliery, May 15th, 1884. On day of accident, between twelve and one o'clock, P. M., deceased went to the blacksmith shop, and on his way back to engine-house, in crossing over flue-way, between the boilers and stack, it fell in with him. When rescued therefrom he was roasted to an unrecognizable crisp.

ACCIDENT No. 3.—Elmer Kocher, outside driver, died on September 19, 1884, from injuries received three days previous by an explosion of steam boilers at Lykens Valley colliery. Deceased was employed driving a mule,



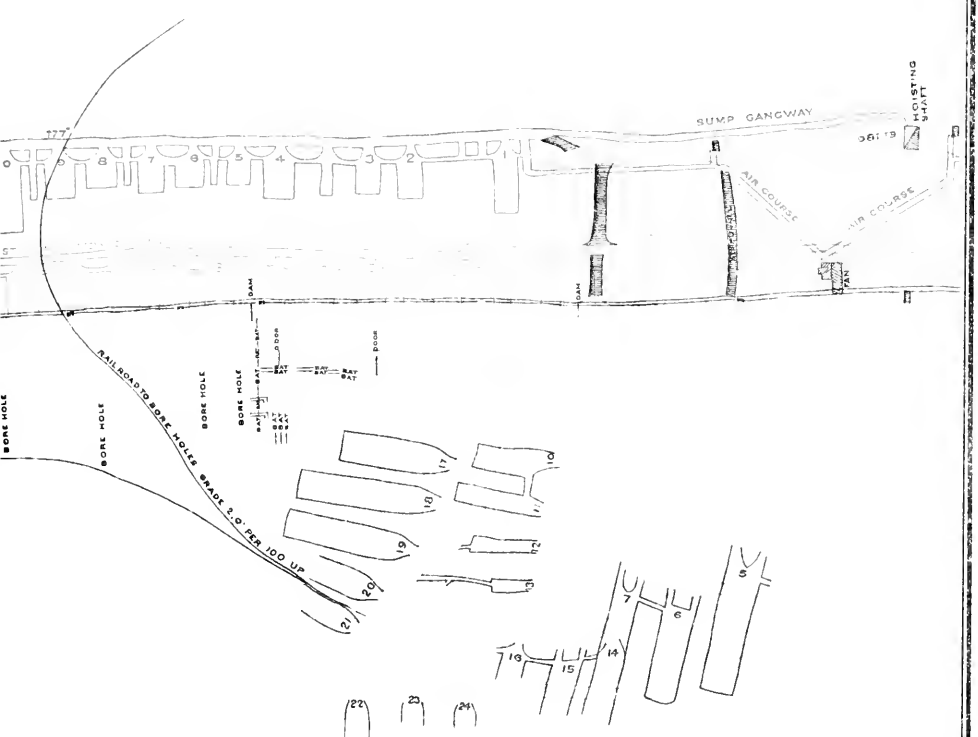
BEAR VALLEY COLLIERY

SKETCH & PROFILE SHOWING THE LOCATION OF THE FIRE & THE ADJACENT WORKINGS

SCALE 200 FT TO 1 INCH.

SHAMOKIN PA. APRIL 10TH 1885

H. C. ZACHARIAS
ASSIT ENGR



NOTE.

GREEN SHOWS WORKINGS IN THE Nº 10½ OR ROUGH VEIN

SIENNA " " " " " 10 VEIN

BLUE " " " " TOP SPLIT OF THE MAMMOTH VEIN

RED " " " " MAMMOTH VEIN PROPER

hauling the empty cars into head of slope and hauling the loaded ones out a short distance to turnout, preparatory to their being hauled to breaker. About ten or fifteen minutes before five o'clock in the evening, while hauling a loaded car from head of slope out to turnout, and while passing over boiler house, the boilers exploded, throwing *débris* in every direction, injuring deceased so as to cause his death as above stated.

Bear Valley Colliery Mine Fire.

Through the kindness of Mr. George P. Clemens, division engineer of the Philadelphia and Reading Coal and Iron Company, and his assistant, H. C. Zacharias, I am able to present in this report a brief account of the above-named colliery mine fire, and the methods employed to extinguish it.

The Bear Valley colliery is situated about three and one half miles southwest of Shamokin, and reaches its coal by means of a shaft, one hundred and six yards deep, to the north dip of the No. 10½, or Rough, vein; thence, at ninety-seven yards west of the shaft, by a tunnel, forty-five yards long, south to the north dip of the Mammoth vein, cutting the same dip of the No. 10 vein at twenty-seven yards. Gangways have been driven both east and west in all of these veins, and breasts opened therefrom.

The workings more especially referred to in this connection are those of the first three hundred yards of the West Mammoth vein, and were finished some seven or eight years ago. A detailed description of them in this report is deemed unnecessary, if recourse is had to the plan and profile hereto attached.

On the 26th of January, 1883, fire was discovered in breasts 9, 10, and 11. To extinguish it, several methods were tried, without success, when (after some eight thousand three hundred fifty wagon-loads of fire, rock, and *débris* had been drawn out the fire got beyond control) the colliery was flooded to the water-level drift, or tunnel, and it was not until the 4th of September following that the gangways were again cleared of water, after which headings were driven into the places that had been on fire, but as far as they went it was found to have been extinguished.

During the latter part of September, 1884, near the face of the west counter gangway workings, which had recently been worked into the manway adjoining breast No. 8, the temperature was observed to be unusually high and gradually increasing. This at once caused suspicion that a fire had again broken out somewhere inside of breast No. 8, from which direction the heat came, though the absence of the gases produced by combustion either there or in the return air course, or in fact in any part of the mine, seemed to combat this theory. Nevertheless, headings were driven from the No. 8 manway into breast No. 8 at different places, with the view of proving the existence or non-existence of a fire, and also of discovering the source of the unusual heat, but none of these openings disclosed anything except the existence of a great—almost stifling—heat in that vicinity.

It was while this search was being made that the existence and location of the fire was accidentally discovered on the morning of October 23,

1884, by small pieces of red hot coal dropping down on to the gangway from the manway between breasts 13 and 14. The alarm was at once given and the general manager and other officials of the company notified thereof.

All mining operations were at once suspended, and only the men engaged in combatting the fire were permitted to enter the mine. Steps were at once taken to check if possible its further progress, and consultations had with the view of deciding the best methods of extinguishing it.

It was finally decided to silt breasts 8, 15, and 16 full of coal dirt slush, through eight-inch holes to be drilled from the surface into the face of each of these breasts, and in this way securely confine the fire within those limits. Afterwards similar holes were to be bored in the face of breasts 9, 11, and 13, which were also to be silted full of the slush and thus deluge and seal tightly with the wet mass every interstice in the workings involved by the fire.

To carry out these designs, two perforated dams, slush proof but not water proof, were erected in the gangway, one just inside of breast 18, and the other inside of No. 8 manway, these to allow the water to percolate out of the silting without the mass filling up the gangway beyond the limits to be silted shut. After this a water-tight dam was erected across the gangway just inside the tunnel with an overflow pipe in it so placed as to cause the gangway to be completely filled and roofed with water before it could overflow. This was done to prevent the gangway timbers being ignited in case there should be any delay in getting the silting completed at both ends and also to prevent any accident from the gangway of anything inside.

There were also air-tight batteries erected in each of the headings from the No. 8 manway into the No. 8 breast, and duplicate air batteries erected in the No. 8 manway just above the counter gangway. Also in the chute of the counter breast adjoining the No. 8 manway, and in the manway outside of the counter breast, and triplicate batteries in the heading connecting the counter breast with the No. 8 manway.

There were also two air-tight doors erected in the counter gangway, one just outside of the No. 8 manway, and the other fifteen yards outside of the manway to the counter breast.

After all these stoppings had been completed, (see sketch,) the other parts of the mine were deemed so securely cut off from the fire that the working of the colliery was resumed. In the meantime the plans of action on the surface were being vigorously pushed forward. The drilling of the holes was commenced as soon as the derrick and drilling machinery could be erected. A new dirt plane, seven hundred and seventy feet long, with large dirt bins and trestles at each end, was built, and a 16" 36" hoisting engine with a nine feet eight inch drum, and all fixtures complete, was erected to operate it, and a new railroad, half a mile long, with turn-outs, &c., at each end, was graded, built, and equipped with a seven-ton Baldwin locomotive and twenty-four cars to carry the dirt for silting purposes from

the head of the plane to the bore holes. To supply the water for silting purposes, an S. B. Whiting improved 9″×38″ double-acting steam-pump was erected at the discharge of the shaft pump, and one thousand two hundred and fifty feet of six-inch cast iron column pipe laid therefrom to the bore holes.

On the 5th of November, 1884, the first drill hole fell into breast No. 15, at a depth of one hundred and thirty-five feet, whereupon, all things being ready, the silting was immediately commenced, since which time both drilling and silting have been vigorously pushed forward with every prospect, at this writing, (April 10, 1885,) of the experiment proving completely successful.

An examination of the workings inside of breast 18, made January 12, 1885, showed that the fire had not escaped beyond the limits to which it was intended to confine it, and the several examinations since made verified the results of the first inspection.

Buck Ridge Colliery Mine Fire.

About four o'clock on the morning of August 20, the fireman, while going down the No. 8 slope, discovered the mine to be on fire by coming in contact with the smoke. Being unable to proceed down any further, he came back up and went down the No. 9 slope as far as No. 5 lift. At that point his progress was arrested by large volumes of smoke issuing from the west side of slope, and going down towards the bottom of No. 9 slope He came back up, blew the whistle, and sent the night watchman to Shamokin to notify Messrs. William Booth, Monroe T. Schreffler, and James Booth, the division superintendent, district superintendent, and inside-boss, of the occurrence. The three above-named persons, together with another man, named Joseph Taylor, after having arrived at the colliery, went down the No 9 slope as far as the No. 5 lift. At that point their further progress down the slope was arrested also by the large volumes of smoke coming east from the No. 8 slope. Being unable to explore the mine any further down the slope, they concluded to put a battery or stoping across the slope at that point to shut off as much air as possible from the fire. After their efforts proved fruitless to accomplish the object in view, on account of thick volumes of smoke coming into the slope at that point, they came back up the slope to No. 4 lift. At that point, also, they were unsuccessful on account of the loose and broken character of the strata, after which they came up to No. 3 lift, where they succeeded in putting in the battery. After it was completed, they concluded to stop up the top or mouth of No. 8 slope and all the breaches on the mountain. While all avenues of ventilation and escapements for the gases produced or generated by the fire were being closed, preparations were making to flood the mine. On August 25, a 9″ × 38″ Cameron steam pump, with twelve hundred feet of six-inch column pipe, began pumping water from the Shamokin creek into the top of No. 8 slope. On August 30, another Cameron steam pump of the same size was connected to the same column to pump water into top of same slope, making two

pumps pumping water through the same column into the No. 8 slope. On the same day, August 30, a third Cameron steam pump of the same size, with three hundred feet of eight-inch column, was placed in position about half a mile further west down the creek, and began pumping water into the old water-level drift.

These three pumps continued pumping, day and night, until October 8, when the fire was found to be entirely extinguished, during which there were about sixty million gallons of water pumped into the mine, together with five thousand two hundred and ninety-two wagons, of ninety-two feet capacity each, silted into the No. 8 slope. Nineteen hundred and five dumpers of coal dirt were silted into No. 9 air-hole.

Prosecutions for Violations of the Mine Laws.

Three complaints were entered in the court of common pleas of Northumberland county. The first was for neglect to comply with the eighth section of said law, which states: "He or his assistants shall examine carefully the workings of all mines generating explosive gases every morning, before the miners enter the coal mine or colliery," etc., etc. William Muir, one of the inside bosses at Cameron colliery, on the morning of December 13, 1883, neglected to examine the workings under his charge as above required of him to do. Elias Noll, (one of the miners,) working in breast No. 15 of the west gangway in the Tape vein, on the No. 9 slope level, while going to work, and when near the face of the breast, the naked light which he was using ignited the gas, burning him on the head, face, neck, and hands.

The case was tried at the following May term of court. The defendant was found guilty in manner and form as indicted. His Honor, Judge Rockafeller, sentenced him to pay a fine of twenty dollars and costs of prosecution.

The second complaint made was against Thomas Steele, inside foreman at same colliery, for neglect in complying with the seventh section of the same law, viz: To see that an adequate amount of ventilation is circulated through and to the face of each and every working place throughout the entire mine, to dilute and render harmless, and expel therefrom, the noxious poisonous gases to such an extent that the entire mine shall be in a fit state for men to work therein, etc., etc. The grand jury found a true bill. The defense asked for a settlement, which was granted by defendant paying all costs and obeying the law in the future.

The third complaint was against Charles Penman, inside boss at Pennsylvania colliery, for neglect also to comply with the seventh section of the ventilation act. On April 16, 1884, John Graham, John Derkoskie, and Cora Giokeeno were burned by an explosion of carbureted hydrogen gas while working in No. 3 slope sinking it.

On the following September term of court, the grand jury found a true bill. The defense asked for a settlement, which the court agreed to by the defendant paying all costs and respect the law in the future.

Number.	Date.	Names.	Collieries.	Occupation.	Age.	Married or single.	Children.	Remarks.
1	Jan. 29	Emanuel Tuce,	Williamstown,	Slate-picker,	13			Smothered in pea-coal chute.
2	Feb. 5	Patrick Harley,	Big Mine Run,	Miner,	50	Married,	3	Killed by a fall of top coal.
3	5	Michael Naughton,	Big Mine Run,	Laborer,	27	Single,		Killed by a fall of top coal.
4	6	James Smith,	Tunnel,	Top man,	55	Married,	2	Killed while riding up slope.
5	6	Michael Mulroy,	Tunnel,	Top man,	43	Married,	7	Killed while riding up slope.
6	15	Lawrence Shomper,	Short Mountain,	Laborer,	29	Married,	3	Killed by a fall of top rock.
7	25	John Dunko,	Reliance,	Slate-picker,	19	Single,		Killed; crushed between counter-screen and frame in breaker.
8	Mch. 19	Anthony Yanigan,	Centralia,	Bottom man,	27	Single,		Killed coming out tunnel at bottom of slope.
9	20	Charles Yacoboskie,	Enterprise,	Miner,	27	Single,		Killed by a fall of coal.
10	27	Charles Knause,	Williamstown,	Fan boy,	12	Single,		Killed by a fall of top slate.
11	April 8	Henry F. Hoffmann,	Lykens Valley,	Starter,	24	Married,	1	Killed by a rush of coal.
12	12	Thomas Harpet,	Excelsior,	Miner,	24	Married,	3	Killed by a fall of top rock.
13	16	Paul Covelenskie,	Excelsior,	Laborer,	28	Single,		Killed by a fall of top slate.
14	24	James Laughlin,	Potts,	Starter,	29			Killed while starting coal.
15	May 2	Richard Hoollhan,	Continental,	Miner,	27	Married,	1	Killed; turnout collar fell on him.
16	2	Joseph Mattenweize,	Pennsylvania,	Laborer,	30	Single,		Killed by an explosion of powder in heading.
17	4	Thomas Bernoskie,	Pennsylvania,	Laborer,	40	Single,		Killed by an explosion of powder in heading.
18	8	John Gress,	Williamstown,	Laborer,	22	Single,		Killed by a fall of top rock.
19	13	Henry Keller,	North Ashland,	Driver,	19	Single,		Killed; crushed between mine car and gangway.
20	15	Fred. Dillman,		Engineer,	32	Married,	2	Burned to death in boiler.
21	30	George Stoney,	Tunnel,	Miner,	31	Married,	2	Suffocated by rush of coal and CH. gas.
22	June 5	Anthony Lawrence,	Pennsylvania,	Miner,	33	Single,		Killed by a fall of top slate.
23	20	Thomas Phillips,	Bellmore,	Miner,	26	Single,		Killed by the premature explosion of a blast.
24	July 20	Charles M. Snyder,	West Brookside,	Laborer,	19	Single,		Died from injuries received July 12; crushed between empty and loaded mine cars.
25	23	Henry Haupt,	Burnside,	Miner,	23	Single,		Killed; struck by coal flying from a blast.
26	26	Thomas Stanton,	Bast,	Miner,	31	Married,	5	Killed; head crushed between top of car and slope-collar.
27	Aug. 7	Samuel Grego,	Luke Fidler,	Miner,	33	Married,	3	Died from injuries received by being struck with coal from a blast.
28	20	Clifford Daubert,	Cameron,	Laborer,	20	Single,		Killed by being struck with coal from a blast.
29	20	William Clark,	Greenback,	Miner,	36	Married,	3	Suffocated by gas from Buck Ridge colliery.
30	20	William Taylor,	Greenback,	Laborer,	25	Married,	2	Suffocated by gas from Buck Ridge colliery.
31	20	Robert White,	Greenback,	Pump engineer,	15	Single,		Suffocated by gas from Buck Ridge colliery.
32	20	William Carroll,	Greenback,	Miner,	33	Married,	6	Suffocated by gas from Buck Ridge colliery.
33	20	Patrick Haley,	Greenback,	Miner,	35	Married,	7	Suffocated by gas from Buck Ridge colliery.
34	20	William Shankweiler,	Greenback,	Laborer,	27	Married,	4	Suffocated by gas from Buck Ridge colliery.
35	20	George Betz,	Greenback,	Pump engineer,	36	Married,	6	Suffocated by gas from Buck Ridge colliery.
36	25	Herman Siminsky,	Excelsior,	Laborer,	19	Single,		Killed by a fall of top slate.
37	26	Michael Grant,	Bast,	Chute-boss,	35			Killed; crushed in breaker counter-screen cog wheels.
38	Sept. 15	Joseph Quigley,	Bellmore,	Laborer,	33	Married,	2	Died of injuries received; crushed between top mine car and chute.
39	19	Elmer Kocher,	Lykens Valley,	Driver,	19	Single,		Died of injuries received by the explosion of boilers.
40	27	Thomas Gallis,	Enterprise,	Laborer,	38			Killed by a rush of coal in breast.
41	Oct. 2	Andrew Yellon,	Cameron,	Miner,	36	Married,	2	Died of injuries received; struck with coal from a blast.

REGISTER OF FATAL CASUALTIES—Continued.

Number.	Date.	Names.	Collieries.	Occupation.	Age.	Married or single.	Children.	Remarks.
42	Oct. 15	Charles Haper,	Monitor,	Miner,	28	Married,	.	Killed by a fall of bone coal.
43	19	Thomas Jones,	Merriam,	Miner,	48	Married,	8	Died of injuries received by a fall of rock.
44	28	James Rowley,	Sterling,	Miner,	57			Killed by a fall of top slate.
45	Nov. 12	John Burke,	Locust Gap,	Miner,	54	Married,		Died of injuries received by a fall of coal.
46	14	James Monahan,	Big Mine Run,	Miner,	35	Married,	5	Killed by a fall of top rock.
47	19	Thomas Gallagher,	Hazle Dell,	Miner,	45	Married,	8	Died of injuries received by a fall of coal.
48	21	Emanuel Sheaffer,	West Brookside,	Miner,	35	Married,		Killed by a fall of coal.
49	22	William Davis,	Keystone,	Driver,	18	Single,		Died of injuries received by being caught between mine cars.
50	Dec. 2	Lawrence Barrett,	Centralia,	Miner,	37	Married,	5	Killed by a fall of coal.
51	8	Joseph C. Duceman,	Henry Clay, No. 1,	Miner,	28	Married,	6	Suffocated by a sudden outburs of CH, gas and rush of coal.
52	8	John Fox,	Henry Clay, No. 1,	Miner,	23	Married,		Suffocated by a sudden outburst of CH, gas and rush of coal.
53	8	Peter Koble,	Henry Clay, No. 1,	Miner,	36	Married,	2	Suffocated by a sudden outburst of CH, gas and rush of coal.
54	8	Richard Tucket,	Henry Clay, No. 1,	Miner,	40	Married,	5	Suffocated by a sudden outburst of CH, gas and rush of coal.
55	16	James Dugnit,	Sterling,	Miner,				Killed by a fall of top coal.
56	20	Albert Spatzer,	Big Mountain,	Miner,				Killed by a fall of slate on which he was standing.

REGISTER OF NON-FATAL CASUALTIES—Shamokin Division.

No.	Date.	Names.	Collieries.	Occupation.	Remarks.
1	Jan. 2	Robert Kastner,	Merriam,	Loader,	Hips bruised while engaged in uncoupling cars.
2	6	Charles Kupp,	Burnside,	Laborer,	Foot badly bruised; car ran over it.
3	7	William Partridge,	North Franklin, No. 1,	Laborer,	Knee-cap broken; caused by an explosion of powder.
4	7	Patrick McDonald,	Hazle Dell,	Miner,	Small bone of leg broken; struck by a car.
5	8	Theo. Sucipski,	Henry Clay shaft, No. 1,	Miner,	Injured on body; struck by a piece of slate.
6	9	Joseph McCall,	Burnside,	Miner,	Thumb and fore-finger nearly cut off while making a wedge.
7	10	Michael McCormick,	Bear Valley,	Miner,	Collar-bone broken; fall of slate.
8	16	Michael Gallagher,	North Ashland,	Bottom driver,	Leg injured; caught between two cars.
9	19	George Fegley,	Short Mountain,	Miner,	Both legs broken; fall of coal.
10	22	Thomas Lyons,	Hickory Swamp,	Laborer,	Injured about body; crushed between mine car and hoisting-frame on tip.
11	23	Henry Weber,	Logan,	Laborer,	Head injured; crushed between mine car at bottom of hoisting-slope.
12	23	Stan. Zebliuski,	Cameron,	Laborer,	Leg broken by a fall of top slate.
13	23	D. P. Thompson,	West Brookside,	Miner,	Skull fractured; struck by a piece of coal.
14	24	Henry Kindler,	Black Diamond,	Miner,	Cut on nose and forehead by a fall of coal.
15	25	Kline Smith,	Enterprise,	Laborer,	Body injured; caught between car and slope-collar.
16	25	Dennis Dane,	Locust Spring,	Platform man,	Ribs broken; fell down steps of breaker.
17	31	Jacob Reese,	Henry Clay shaft,	Miner,	Leg broken; fall of top slate.
18	31	Thomas Fern,	Centralia,	Driver,	Collar-bone broken; crushed between wagon and railroad wall.
19	Feb. 1	Thomas B. Moyer,	Short Mountain,	Car loader,	Shoulder fractured; caught between two railroad cars.
20	12	John Hendricks,	Centralia,	Rock loader,	Leg broken; struck by a plank.
21	13	Charles Ochender,	Bear Valley,	Loader,	Shoulder, arm, and back injured; caught between wagons.
22	18	Thomas Rowland,	Preston, No. 2,	Miner,	Ribs broken; fell going down chute.
23	21	Martin Hoffman,	Big Mountain,	Miner,	Back injured; fall of slate.
24	25	John Constantine,	Morris Ridge,	Laborer,	First joint of one finger cut off; fell between elevator and chute.
25	25	Owen Delowry,	Hickory Ridge,	Miner,	Collar-bone broken; fall of coal.
26	26	John Sabilskie,	Pennsylvania,	Miner,	Cut and bruised by a premature blast.
27	28	Amos Rhodes,	Henry Clay shaft,	Miner,	Head bruised and chin cut by a fall of slate.
28	March 1	John Crawford,	Bellmore,	Miner,	Hands, face, and neck burned by gas.
29	1	Patrick Doyle,	Bellmore,	Laborer,	Hands, face, and neck burned by gas.
30	3	Ignatz Dietman,	Luke Fidler,	Driver,	Hands mashed between mine cars.
31	4	Isaac C. Graeff,	Short Mountain,	Top man,	Shoulder and thigh broken; mashed between mine cars.
32	4	Charles Kaufman,	Locust Spring,	Dirt loader,	Ribs broken; crushed between dumper and chute.
33	6	John Foote,	Henry Clay shaft,	Miner,	Leg broken; fall of coal.
34	12	George Lester,	Williamstown,	Laborer,	Leg broken; mine car jumped track.
35	12	Nathan Erdman,	Burnside,	Miner,	Tongue nearly cut off; struck by prop on chin.
36	14	John Onaskie,	Cameron,	Laborer,	Crushed between mine cars.
37	17	William Lebo,	Short Mountain,	Slate picker,	Arm broken; fell from chute.
38	18	John Shofstall,	Short Mountain,		Arm broken; caught between mine car and collar.
39	19	Charles Pucaskie, sr.,	Williamstown,	Miner,	Leg injured; fall of coal.
40	21	John McAndrew,	Luke Fidler,	Driver,	Body injured; run over by mine car.
41	22	Samuel W. Alvord,	Lykens Valley,		Arm broken; fall of slate.
42	26	John Misberger,	Greenback,	Driver,	Seriously injured; struck on head by piece of coal.
43	26	William Fehlein,	Williamstown,	Miner,	Seriously injured by an explosion of powder.
44	26	John Wommer,	Williamstown,	Miner,	Seriously injured by an explosion of powder.
45	28	Thomas Goldsborough,	Keystone,	Bottom man,	Injured by falling down slope.
46	30	Henry Mann,	Preston, No. 3,	Platform man,	Internally injured; fell while prying out stones.

REGISTER OF NON-FATAL CASUALTIES—Continued.

No.	Date.		Names.	Collieries.	Occupation.	Remarks.
47	April	1	James McDonald,	North Ashland,	Driver,	Arm broken; fell under empty mine cars.
48		1	Jere. McAuliff,	Lykens Valley,	Driver,	Leg broken; piece of plank fell on him from top of slope.
49		2	John Kowalski,	Mt. Carmel,	Miner,	Burned by an explosion of powder.
50		2	Joseph Bober,	Luke Fidler,	Miner,	Face and hands burned by an explosion of gas.
51		1	Jacob Arnold,	Locust Spring,	Miner,	Leg broken by a fall of stone.
52		4	Robert Smith,	Williamstown,	Miner,	Injured by a premature blast.
53		4	John Glasser, jr.,	Williamstown,	Driver,	Leg bruised by a fall of timber.
54		7	Henry Nolte,	Logan,	Miner,	Injured by a gangway leg falling on him.
55		14	—— Burge,	Logan,	Miner,	Injured by a piece of coal flying from a shot.
56		14	John Brennan,	Continental,	Starter,	One finger, and one joint of another, blown off by explosion of a dualine cap.
57		16	John Graham,	Pennsylvania,	Miner,	Burned by an explosion of gas.
58		16	John Deforski,	Pennsylvania,	Laborer,	Burned by an explosion of gas.
59		16	Simon D. Fellon,	Pennsylvania,	Laborer,	Burned by an explosion of gas.
60		16	Cora Giokeno,	Pennsylvania,	Laborer,	Burned by an explosion of gas.
61		21	Herman Mihinke,	West Brookside,	Miner,	Leg broken; fall of coal.
62		24	William Kerstetter,	Bear Valley,	Miner,	Burned by an explosion of powder.
63		24	Patrick Burns,	Centralia,	Car loader,	Right leg amputated; crushed between railroad cars.
64		24	Martin Farrell,	Logan,	Miner,	Cut on head by fall of slate.
65		26	Paul O. Carnie,	Pennsylvania,	Miner,	Injured on face and body by a premature blast.
66		29	Martin Barstinola,	Pennsylvania,	Miner,	Thigh-bone broken; fall of slate.
67	May	3	James Eaton,	Luke Fidler,	Slate-picker,	Two fingers mashed.
68		5	Joel Kaseman,	Hickory Swamp,	Carpenter,	Seriously injured; fell from trestling.
69		12	Jacob Bailer,	Black Diamond,	Miner,	Eye injured; struck by a piece of coal.
70		21	Otis Long,	West Brookside,	Driver,	Leg broken; caught between mine-car wheel and rail.
71		23	Charles Dromboskie,	Luke Fidler,	Miner,	Injured by a fall of top coal.
72		23	John Gofick,	Centralia,	Driver,	Head cut; caught between top of dirt-dumper and apron.
73		26	Stan. Verbitskie,	Morris Ridge,	Laborer,	Crushed between mine car and platform.
74		27	A. J. Bradley,	Cameron,	Miner,	Hurt by a fall of top coal.
75		28	John Hughes,	Preston, No. 3,	Loader,	Leg injured by a fall of coal.
76		29	Frank Dormer,	Cameron,	Miner,	Injured by a piece of coal striking him on head.
77		31	John Smith,	Luke Fidler,	Slope man,	Slightly injured by a rail falling on him.
78	June	6	Charles Berry,	Luke Fidler,	Miner,	Fell down breast, and lacerated his hand badly.
79		6	William Hatton,	Williamstown,	Miner,	Left shoulder, hip, and leg severely bruised; fall of top coal.
80		9	Frank Haley,	Greenback,	Miner,	Injured about body by a fall of coal.
81		10	John Shoetes,	Cameron,	Driver,	Thumb injured; caught by spreader-hook.
82		10	Daniel Burns,	Bast,	Repair man,	Head cut, and back and leg bruised by a fall of slate.
83		13	Wasco Bodish,	Peerless,	Miner,	Back and leg bruised by a fall of coal.
84		17	John Silko,	Pennsylvania,	Miner,	Burned by an explosion of gas.
85		17	Frank Ambrosavage,	Pennsylvania,	Miner,	Burned by an explosion of gas.
86		26	John McNally,	Logan,	Miner,	Injured about body by a fall of coal.
87		26	William Cavanaugh,	Williamstown,	Laborer,	Bruised and cut on head by coal flying from a blast.
88		27	Frank Trekuskie,	Luke Fidler,	Miner,	Leg injured by a fall of slate.
89		30	Stephen McNamee,	Pennsylvania,	Miner,	Shoulder dislocated, &c., by a fall of coal.
90		30	John Conaski,	Excelsior,	Miner,	Leg broken by a fall of top rock.
91		30	Michael Zivich,	Big Mountain,	Miner,	Arm broken by a fall of slate.
92	July	2	James Lehman,	Cameron,	Miner,	Injured by a fall of rock in slope.

93	July	2	James Robinson, . . .	Cameron, ...	Miner, ...	Hand injured by a fall of coal in breast.
94		3	John Owen, ...	Cameron, ...	Laborer, . . .	Struck by flying piece of coal from a blast.
95		7	Valentine Corissova, .	Cameron, ...	Miner, ...	Injured by falling down manway.
96		7	William Glassmaker, .	West Brookside, . . .	Miner, ...	Leg broken and back bruised by a fall of coal.
97		9	Lawrence Kickenny, .	Centralia, ...	Starter, ...	Arm broken and head cut by a rush of coal.
98		10	John Orth, . . .	Logan, ...	Laborer, ...	Injured about body; while drawing tamping of a missed shot, shot exploded.
99		12	Daniel Shinaskie, . .	Logan, ...	Miner, ...	Hip dislocated by a lump of coal rolling on him.
100		12	Robert Batart, . .	Reliance, ...	Miner, ...	Leg broken and head cut by a fall of top rock.
101		14	Michael Dubraskie, .	Cameron, ...	Miner, ...	Injured by a fall of coal.
102		17	John Backus, ...	Cameron, ...	Miner, ...	Burned by an explosion of powder.
103		17	John Murphy, . . .	Cameron, ...	Miner, ...	Two thumbs cut off.
104		23	John McGovern, . . .	Merriam, ...	Miner, ...	Breast and shoulders injured by a fall of slate.
105		30	Dennis Joyce, . . .	Centralia, ...	Spragger, ...	Fingers mashed by a mine car running over them.
106	Aug.	2	Thomas Wormdel, . .	Stirling, ...	Miner, ...	Leg broken by a fall of coal.
107		2	Charles Kraep, . . .	Keystone, ...	Ash man, ...	Badly bruised by being thrown from bridge.
108		5	Vincent Rausch, . . .	Big Mountain, . . .	Miner, ...	Hand mashed; caught between prop and slate.
109		6	Edward Harrison, . .	Bast, ...	Miner, ...	Thigh cut and bone fractured by a slip of coal.
110		7	Walter Scoble, ...	Big Mountain, . . .	Miner, ...	Leg broken by a fall of coal.
111		14	Edward Haskins, . . .	Short Mt. & Ly's Val.,	Laborer, ...	Foot crushed by a mine car running over it.
112		11	Martin Conway, . . .	Tunnel, ...	Door-boy, ...	Shoulder dislocated; ran against mine car in gangway.
113		15	George Resh, ...	Tunnel, ...	Laborer, ...	Hip dislocated while assisting to get roller segment to breaker.
114		19	John Dunne, ...	Big Mountain, . . .	Miner, ...	Leg injured by a fall of slate.
115		20	John Henning, . . .	Cameron, ...	Miner, ...	Seriously injured; struck by a piece of coal from a blast.
116		26	John Thomas, ...	Tunnel, ...	Miner, ...	Big toe broken by a piece of coal falling on it.
117		29	Robert Thompson, .	Burnside, ...	Miner, ...	Burned on hands, face, and neck by explosion of CH. gas.
118	Sept.	14	Joseph Morrissey, . .	Big Mountain, . . .	Miner, ...	Head cut by being struck by a piece of coal flying from a blast.
119		16	Isaac Osman, ...	Star, ...	Miner, ...	Head, neck, face, and hands burned by explosion of CH. gas.
120		16	John Bluff, ...	Cameron, ...	Miner, ...	Injured by a mine car running over him.
121		17	George Cuzacavitch, .	Morris Ridge, ...	Miner, ...	Leg broken by coal rolling over him in chute.
122		20	Michael Sullivan, . .	Logan, ...	Laborer, ...	Hip injured by being struck by coal flying from a blast.
123		24	James Devitt, ...	Hickory Swamp, . . .	Miner, ...	Leg cut off by a fall of slate in gangway.
124		24	Irwin Wehry, ...	Stirling, ...	Door-boy, . . .	Head cut by being caught between mine cars.
125		25	Peter Haas, ...	Burnside, ...	Miner, ...	Knee injured severely; struck by a lump of coal.
126		26	Joseph Fusse, ...	Preston, No. 3, . . .	Starter, ...	Burned about face and eyes by an explosion of powder.
127		27	James Golden, ...	Stirling, ...	Miner, ...	Foot injured; ran miner's needle into it.
128		27	James Williams, . . .	Enterprise, ...	Miner, ...	Body injured while in the act of starting coal in breast.
129		27	Michael Dunrick, . . .	Lake Fidler, ...	Driver, ...	Badly squeezed between a prop and mine car.
130		30	Walter Lawrence, . .	Williamstown, ...	Door-boy, ...	Leg broken while attempting to jump on loaded mine car.
131	Oct.	1	John Haus, ...	Black Diamond, . . .	Miner, ...	Hand injured by a fall of slate.
132		4	Thomas Kane, ...	Centralia, ...	Laborer, ...	Leg broken; fell from scaffold at breaker.
133		4	Peter Feteroskie, . .	Cameron, ...	Miner, ...	Hand slightly burned by CH. gas.
134		7	William Hart, ...	Preston, No. 3, ...	Driver, ...	Wrist broken; jammed between frames and timber.
135		9	George Whistler, . .	Pennsylvania, ...	Slate-picker, . .	Leg broken; fell from plank in breaker.
136		14	Martin Bahon, . . .	Williamstown, ...	Loader, ...	Hips injured; caught between mine cars and platform.
137		15	John Burke, ...	Locust Gap, ...	Miner, ...	Head cut and leg broken by a fall of coal.
138		16	E. Long, ...	Morris Ridge, ...	Miner, ...	Shoulder injured by a fall of coal.
139		16	William Rapp, ...	Williamstown, ...	Laborer, ...	Leg injured; caught between mine cars.
140		18	John Carney, ...	Lancaster, ...	Miner, ...	Leg broken by piece of stone sliding on him.
141		20	William Boehmer, . .	Tunnel, ...	Car oiler, ...	Arm broken; bumped between mine cars.
142		21	Enoch Powell, ...	Stirling, ...	Miner, ...	Leg broken by a fall of top slate.
143		25	Charles Berger, . . .	Big Mountain, ...	Miner, ...	Injured by falling down a breast.
144		27	John Durkin, ...	Keystone, ...	Rock man, ...	Leg mashed from knee to ankle; loaded dirt dumper ran over him.
145		28	John Grelner, ...	Williamstown, ...	Miner, ...	Head and shoulder injured; prop fell on him.

REGISTER OF NON-FATAL CASUALTIES. Continued.

No.	Date.	Names.	Collieries.	Occupation.	Remarks.
146	Oct. 28	Charles Frommd, . . .	Williamstown, . . .	Miner, ...	Slightly burned by CH. gas.
147	28	Henry Pilz, ...	Preston, No. 2, ...	Miner, ...	Head, neck, and hand cut by a fall of coal.
148	29	Frank Drobish, . .	Cameron, ...	Miner, ...	Injured by a fall of coal.
149	Nov. 4	Elmer Muench, . . .	Cameron, ...	Bottom man, . .	Leg broken; guard rail in slope getting loose and struck him.
150	5	John Johnson, ...	Bear Valley, ...	Miner, ...	Three ribs broken and back injured by a fall of rock.
151	6	James Kute, . . .	Short Mountain, . . .	Miner, ...	Thigh broken by a piece of rock striking him.
152	8	Stan. Chevilinskie, . .	Pennsylvania, . . .	Laborer, ...	Slightly burned on face, neck, and hands by CH. gas.
153	10	John Socraskie, . .	Black Diamond, . . .	Laborer, ...	Arm broken by a fall of top coal.
154	12	William Caslen, . . .	Williamstown, ...	Driver, ...	Body injured; crushed between mine car and top rock.
155	19	Lorenz Whitworth, .	Burnside, ...	Laborer, ...	Leg broken by a fall of slate.
156	20	Landis Brown, ...	Cameron, ...	Top man, . . .	Squeezed between mine cars.
157	24	Peter O'Donnel, . . .	Preston, No. 2, ...	Starter, ...	Head and hand injured by a premature blast.
158	24	John R. James, . . .	Big Mine Run, ...	Miner, ...	Leg broken by a fall of coal.
159	26	Michael Bartzer, . . .	Pennsylvania, . . .	Laborer, ...	Body injured; struck by a piece of broken dirt dumper.
160	27	Joseph Parana, ...	Excelsior, ...	. . . . .	Injured in new slope.
161	28	Oscar Reed, ...	Henry Clay, No. 1, . .	. . . . .	Leg broken by a fall of top slate.
162	Dec. 2	Samuel Smith, ...	West Brookside, . . .	Repair man, . .	Collar-bone broken; caught between coal and mine car.
163	2	Andrew Ritz, ...	Bellmore, ...	Laborer, ...	Body injured; caught between mine cars.
164	4	Adam Riland, ...	Keystone, ...	Miner, ...	Face cut, &c., by a fall of coal.
165	8	Isaac Davis, ...	Henry Clay, No. 1, . .	Miner, ...	Burned on face, neck, and hands by CH. gas.
166	8	Alex. Moucheron, . .	Cameron, ...	Driver, ...	Arm broken caught between mine car and gangway timber.
167	9	Daniel Ebright, . . .	Cameron, ...	Driver, ...	Leg broken, &c., caught between mine car and gangway door.
168	11	Joseph J. Laively, .	Short Mountain, . . .	Miner, ...	Spine injured by a fall of coal.
169	12	Frank Fisher, ...	Williamstown, ...	Laborer, . . .	Collar-bone broken; caught between mine car and breaker timber.
170	13	Jonas Bixler, ...	Star, ...	Miner, ...	Injured by the bottom sliding down breast, carrying him with it.
171	16	Stan. Ezeneskie, . .	Bellmore, ...	Laborer, ...	Knee crushed; caught between loaded mine cars.
172	17	William Rostemeier, .	Locust Spring, ...	Miner, ...	Head, face, neck, and hands burned by an explosion of powder.
173	. . . . .	Michael Farrell, . .	Logan, ...	Slate-picker, . .	Leg broken; dirt dumper ran over him.
174	. . . . .	Robert Bowman, . . .	Williamstown, ...	. . . . .	Arm injured.

REPORT OF VENTILATION, EMPLOYEES, COAL MINED, DAYS WORKED, &c., FOR YEAR ENDING DECEMBER 31, 1884.

COLLIERIES.	Operators.	INSIDE.						OUTSIDE.				Number horses and mules.	Number kegs of powder used.	Number days worked by breaker.	VENTILATION.	
		Number inside bosses.	Number miners.	Number laborers and company men.	Number drivers.	Number door-boys.	Total.	Number bosses and mechanics.	Number laborers and company men.	Number drivers and slate-pickers.	Total.				Diameter fan.	Power.
Mt. Carmel Shaft,	Philadelphia and Reading Coal and Iron Co.,	2	175	53	53	15	298	13	65	138	216	64	3 800	195	1-18	40
East,	do. do.	2	80	73	13	15	183	14	56	92	162	40	1 250	192	1-15	10
West Brookside,	do. do.	4	195	227	50	11	487	24	78	128	230	135	3, 800	204	1-12	30
															1-18	40
Bear Valley,	do. do.	1	85	36	11	4	137	11	47	91	149	43	1. 855	186	1-18	40
Burnside,	do. do.	2	173	21	12	3	211	13	41	85	139	36	1 705	201	1-18	50
															1-15	30
Keystone,	do. do.	1	46	56	7	7	117	9	54	74	137	23	200	198	1-12	
Locust Run,	do. do.							5	6		11				1-18	60
Merriam,	do. do.	1	114	90	19	18	243	13	59	104	176	43	1. 375	192		1-40
Locust Spring,	do. do.	1	133	37	9	8	188	7	42	68	117	39	1 975	186	2-18	1-45
Potts,	do. do.							1	2		3		25	54	1-15	30
															1-16	16
North Ashland,	do. do.	1	67	45	5	1	119	12	56	92	160	41	1. 050	195	1-12	20
Preston, No. 2,	do. do.	1	37	42	10	3	93	11	50	92	153	40	345	196	1-12	16
Preston, No. 3,	do. do.	1	93	70	12	7	183	14	59	88	161	42	385	168	1-15	40
															1-15	30
Tunnel,	do. do.	1	59	74	15	11	160	16	50	104	179	43	175	186	1-16	40
North Franklin, No. 1,	do. do.	1	18	8	3	1	31	8	27	59	94	15	550	168	1-18	50
North Franklin, No. 2,	do. do.	1	111	46	6	6	170	11	43	96	150	34	3 100	204	1-9	30
Locust Gap,	do. do.	1	77	54	13	9	154	16	45	75	136	29	2. 075	192	1-12	20
Perriess,	do. do.	1	76	51	8	1	117	10	46	58	114	18	850	132	1-12	20
Buck Ridge,	do. do.	1	12	2			15	12	85	9	106	10	150	58 25	1-15	30
Greenback,	do. do.	1	80	53	7		141	5	17	40	62	20		148	1-12	10
Monitor,	do. do.	1	75	72	20	7	175	12	41	82	138	44	1. 225	192	1-12	20
Reliance,	do. do.	1	113	14	20	4	152	12	38	95	145	32	2. 175	198	1-12	20
Big Mountain,	Patterson & Llewellyn,	3	190	85	30	10	318	10	50	75	135	80	3, 245	236	1-12	20
															1-16	40
Excelsior,	C. W. Kingsley & Co.,	2	126	83	17	3	231	8	52	80	140	42	4. 125	267. 20	2-15	40
															each.	each.
Enterprise,	Thomas Baumgardner & Co.,	2	146	100	24	3	275	11	31	46	88	37	3 874	251. 75	1-12	50
Henry Clay, No. 1,	J. Langdon & Co.,	1	80	71	12	6	170	10	22	50	82	27	1, 973	222. 25	1-12	30
															1-12	25

REPORT OF VENTILATION, EMPLOYEES, COAL MINED, DAYS WORKED, &c.—Continued.

COLLIERIES.	Operators.	INSIDE.						OUTSIDE.				Number horses and mules.	Number kegs of powder used.	Number days worked by breaker.	VENTILATION.	
		Number inside bosses.	Number miners.	Number laborers and company men	Number drivers.	Number door-boys.	Total.	Number bosses and mechanics.	Number laborers and company men.	Number drivers and slate-pickers.	Total.				Diameter fan.	Power.
Sterling,	Kendrick & Co.,	1	136	80	12	6	235	12	26	73	111	27	1 926	234	1-12 1-12	25 25
Loyal Oak,	Tillet & Bro.,	1	9		2		12			4	4	3	130	148	none.	
Cameron,	Mineral Railroad and Manufacturing Co.,	2	230	172	32	13	450	29	94	123	246	85	6 605	300.55	1-12 1-14	20 to 60
Luke Fidler,	do. do.	1	99	124	24	9	257	16	57	78	131	59	3,405	293 65	1-16	50
Hickory Ridge,	do. do.	1	62	53	9	5	130	7	22	32	61	23	791	288 15	1-10	25
Short Mountain & Lykens Valley.	Lykens Valley Coal Company,	2	196	248	86	34	566	50	113	180	343	203	3,386	293.50	4 9 to 14	30 to 100
Williamstown,	Summit Branch Coal Company,	2	415	186	66	33	702	60	46	180	286	150	10,952	305.25	5 14 to 18	35 to 40
Lancaster,	Smith & Keiser,	1	33	6	4		44	4	5	19	28	11	786	246		
Black Diamond,	William Schwenk & Co.,	1	40	20	3		64	8	14	22	44	6	1 620	281	1-12	20
Centralia,	Lewis A. Riley & Co.,	1	69	75	13	4	162	13	77	152	242	47	2 097	200.05	1-14	
Logan,	do.	1	152	173	17	9	352	17	85	183	285	48	5,697	209.70	1-14 1-16	
Hazle Dell,	do.	1	53	54	8	4	117	5	20	2	27	10	2,185		1-12	
Mt. Carmel,	Montellius, Righter & Co.,	1	102	103	20	14	240	22	38	63	123	38	4 294	234.60	1-12	20
Big Mine Run,	J. Taylor & Co.,	2	117	72	18	14	223	16	50	104	170	40	2,698	205	1-10 1-16	25 40
Continental,	Lehigh Valley Coal Company,	1	31	81	13	2	131	16	53	85	154	22	1 393	194	1-12 1-14	
Pennsylvania,	Union Coal Company,	2	229	114	26	15	386	25	95	116	236	81	. . . .	230	1-14 1-16 1-16	50 40 40
Hickory Swamp,	do.	1	84	52	8	2	147	11	60	80	151	34	1,167	214 75	1-16	40
Bellmore,	S. S. Bickel & Co.,	1	79	76	10	5	171	15	71	66	152	25	972	220	1-16	
Morris Ridge,	Isaac May & Co.,	1	114	32	4	2	153	7	12	71	90	15	2,034	220	2-12 each.	50
Garfield,	William H. Douty,	1	47	15	2	2	67	7	41	21	69	8	251	89 25		
Star,	Charles Hutchinson,	1	38	6	1	1	47	8	15	13	36	5		63	none.	
Big Run Gap,	James Fennel,		5	4	1		10	2	4		6	5	60	204	none.	
Pioneer,	David Vaughn,		2	1			3		1	2	3	1	24	226	none.	

Rausch Gap,	Israel Nye,	. .	3	2	1	. . .	6	. .	4	.	4	1	75	. . .	none.	
Neilson,	J. Langdon & Co.*															
Ben Franklin,	Douty & Baumgardner,	1	14	26	2	.	43	4	29	23	56	20	50	105		
McAuley,	Allan Mann,		2	4	1		7	1			1	1	20	100		
Big Mountain, No. 2,	John Q. Williams,	1	2		1		4		3		3	2	20	100		
Montana,	Lehigh Valley Coal Company,	.				.	.	2	7	.	9					
Reno,	do. do.	1	2	5		. .	8	5	4		9	5	.	5		
							9,105	.	.		6,463	1,946	92,420	†192.50		

* Sinking shaft; 35 men employed sinking and working outside.

† Average.

REPORT OF VENTILATION, EMPLOYEES, COAL MINED, DAYS WORKED, &c.—Continued.

COLLIERIES.	Operators.	VENTILATION.		MACHINERY.								Number of tons of coal shipped.
		Revolutions per minute.	Furnace.	Number of engines.	Diameter of cylinder—inches.	Stroke—inches.	Hoisting-drum—diameter in feet.	Hoisting-rope—diameter in inches.	Number of boilers.	Length in feet.	Diameter in inches.	
Mt. Carmel Shaft,	Phila. and Reading Coal and Iron Co.,	85	None,	7	9 to 24	24 to 48	10⅔ to 5	1⅛ each	19	20 to 34½	30 to 40	167,115.00
East,	do. do.	70	...	9	12 to 55	12 to 120	6 to 12	1¼ to 1⅜	26	28 to 30	34	82,309.60
		110										
West Brookside,	do. do.	73	...	..	....	....	.. ..	....	.....	.....	. ..	320,000.00
		30										
Bear Valley,	do. do.	60	...	7	10 to 20	15 to 48	9⅞ & 12	1¼ to 1⅜	22	30 to 31	30 to 36	83,631.00
Burnside,	do. do.	70	...	6	12 to 18	30 to 72	6⅛ to 7⅛	1¼	12	28¼ to 30½	32 to 34	64 163 00
		40										
Keystone,	do. do.	....	....	7	12 to 60	24 to 120	7⅞ to 14	1⅛ to 2	16	30	34	60,672.00
*Locust Run,	do. do.											
Merriam,	do. do.	90	...	6	14 to 24	24 to 48	8½ to 11¾	1¾ to 2	12	30 to 30¼	34 to 36	86,283 00
		100										
Locust Spring,	do. do.	70	...	5	12 to 18	24 to 48	12	1⅝	12	30 to 30½	34 to 36	80,567.00
Potts,	do. do.	...	..	9	10 to 50	12 to 120	10 to 13⅜	1¼ to 2	38	20 to 30½	30 to 36	13 331.00
North Ashland,	do. do.	90	...	4	9 to 18	24 to 36	14	1½	17	30½	31	102,127.00
Preston, No. 2,	do. do.	88	...	4	14 to 18	24 to 36	Av. 9½	1½	13	25 to 37	34 to 36	58 119.00
Preston, No. 3,	do. do.	75	...	7	12 to 55	30 to 120	8 to 18	1¼ to 1¾	22	25 to 30½	30 to 34	71 598 00
		79										
Tunnel,	do. do.	140	...	8	12 to 50	30 to 120	8 to 13	1½ to 2	40	22½ to 31	34 to 40	90,119 00
North Franklin, No. 1,	do. do.	60	...	5	12 to 16	24 to 36	12	2	12	29½ to 36	30 to 36	33,817.00
North Franklin, No. 2,	do. do.	50	...	5	10 to 16	30 to 36	6½ to 7	1½	10	30 to 30½	31 to 36	76 273 00
Locust Gap,	do. do.	75	...	5	10 to 20	12 to 72	8 to 12	1⅞ to 2¼	16	30	34	66,424.00
Peerless,	do. do.	40	...	5	12 to 16	24 o 30	8 to 8½	1⅝	22	30	30 to 34	19 194.00
Buck Ridge,	do. do.	....	...	2	16 to 20	48	8 to 9½	1¼	14	26 to 30	34	6,398.00
Greenback,	do. do.	...	...	4	6 to 18	12 to 36	8	1½	12	25 to 30	30 to 34	43 039 00
Monitor,	do. do.	90	...	7	10 to 21	21 to 72	8 to 10½	1¼	16	30 to 40	34 to 36	93 543 00
Reliance,	do. do.	75	....	5	10 to 20	18 to 48	5 to 12	1¼	16	26 to 30	34 to 36	91 127.00
Big Mountain,	Patterson & Llewellyn,	..	...	5	8 to 18	18 to 36	.....	....	12	30	36	139 742 05
Excelsior,	C. W. Kingsley & Co.,	Each 80	...	...	.	.	.	.	..	. .	.	137,036.06
Enterprise,	Thomas Baumgardner & Co.,	120	.	3	12 to 24	30 to 60	10⅛ to 19	Each 1½	23	28¼ to 30	30 to 36	107 375 04
Henry Clay, No. 1,	J. Langdon & Co.,	140	None,	10	12 to 24	24 to 48	10	2	21	28	34	55,628.17
		100		..	..	..	....	..	2	30	30	
Sterling,	Kendrick & Co.,	120	None,	6	10 to 16	24 to 39	12	1½	12	31	30	104 401 01
		100										

Royal Oak,	Tillet & Bro.,	....	None,	1					1	22	30	3 118.10
Cameron,	Mineral R. R. and Manufacturing Co.,	120	None,	12	12 to 18	39 to 60	6 to 12	1¼ to 1½	28	30	36	207,933.06
Luke Fidler,	do. do.	100	None,	9	14 to 18	30 to 36	6 to 10	1¼ to 1⅜	22	30	35	124.826.02
Hickory Ridge,	do. do.	80	None,	8	6 to 18	30 to 36	6 to 10	1¼ to 1⅜	14	30	30 to 36	32,017 06
South Mountain and Lykens Valley,	Lykens Valley Coal Company,	115	None,	27	12	36	5 to 18	1½ to 2	61	27 to 37	30 to 36	135,922.19
Williamstown,	Summit Branch Coal Company,	80 to 90	None,	22			7 to 16	1½ to 2	71	30	33	359 127.19
Lancaster,	Smith & Keiser,			1	10	30			2	16	34	19.900.05
Black Diamond,	William Schwenk & Co.,	80	None,	4	12 to 14	30 to 48	10	1½	5	30	34	33 007.16
Centralia,	Lewis A. Riley & Co.,	85	....	4	12 to 25	15 to 36	12	1¼	20	30	34 to 36	151,983.18
Logan,	do.	90	..	8	11½ to 26	24 to 54	5 to 8	1½ to 1¾	28	30	34	200,795.18
		70										
† Hazle Dell,	do.	75		4	12 to 15	15 to 30	7 & 8	1½	4	30	34	
Mt. Carmel,	Montellius, Righter & Co.,	75	None,	7	10 to 16	22 to 51	4 to 6 8	1⅜	21	30 to 36	34 to 48	146 379.07
Big Mine Run,	J. Taylor & Co.,	75		7	14 to 21	36 to 72	10	1¼	21	32	34	138 656.12
		80										
Continental,	Lehigh Valley Coal Company,	90	....	5	12 to 18	36 to 60	13½	1¾	22	30	34	60 131.17
Pennsylvania,	Union Coal Company,	108	....	7	12 to 18	24 to 36	6 to 12½	1¼ to 1⅜	25	30	30 to 34	120,249.05
		72										
		26										
Hickory Swamp,	do.	45	....	5	12 to 18	15 to 36	6 to 12	1 to 1⅜	9	30	30 to 34	28 740.04
Bellmore,	S. S. Bickel & Co.,	65	..	3	10 to 25	36 to 60	10	1¾	15	30	36	97 684.17
Morris Ridge,	Isaac May & Co.,	75	....	9	6 to 16	8 to 48	8	1¼	8	30	34	86 112 02
Garfield,	William H. Douty,	....		2	20	72	9½	1⅜	8	28 to 30	30 to 36	4.382 16
Star,	Charles Hutchinson,	....	None,	2	14 & 16	Each 36	7	1½	5	30	30 to 34	4,940.04
Big Run Gap,	James Fennel,	....	....	None,			None,	....	None,	....	..	1,940.06
Pioneer,	David Vaughan,	....	....	1	....	....	..	....	1	26	30	737 00
Rausch Gap,	Israel Nye,	....	....	None,		..	None,	..	None,	..	..	1,856.00
Neilson,	J. Langdon & Co.,	....	....	1	18	36	6½	1½	3	40	34	
Ben Franklin,	Douty & Baumgardner,	....	....	2	14	48	8	1⅜	6	28	30	14 422 01
McAuley,	Allan Mann,	....	....	....	....	..	....	.	..	....	....	353.00
Big Mountain, No. 2,	John Q. Williams,	....	....									1,255 00
‡ Montana,	Lehigh Valley Coal Company,	....	..	2	10 & 14	24 & 32	5 & 9	1 & 1⅜	10	28 & 30	34 & 36	
§ Reno,	do. do.	....	....	2	20	72	10½	1⅜	6	30 & 31	36	
Total shipments,												4,280 487.03
Sold and consumed at collieries,												254 564.10
Total production,												4 535,051.13

* Pumping water. † Coal prepared at Centralia colliery breaker. ‡ Pumping water. § Driving tunnel.

NAMES OF COLLIERIES IN OPERATION AND COAL MINED IN THIRD OR SHAMOKIN DIVISION OF THE MINING DISTRICT OF SCHUYLKILL, FOR THE YEARS 1880, 1881, 1882, 1883, AND 1884.

COLLIERIES.	Location.	Operators.	1880.	1881.	1882.	1883.	1884.
Mt. Carmel Shaft,	Alaska Station, Northumberland county,	Phila. and Read. Coal and Iron Co.,	142,999.12	184 358.05	182 130.07	186 884.16	167 115 00
Bast,	Big Mine Run, Northumberland county,	do. do.	102 089.13	91 785.04	90 160.18	112 875 13	82 369 00
West Brookside,	Tower City, Schuylkill county,	do. do.	368,616.04	374 533 00	289 892 02	354,971.06	320 000.00
Bear Valley,	Shamokin, Northumberland county,	do. do.	53 370 07	73.174.13	69,634.08	32 056.17	83,631.00
Burnside,	Carbon Run, Northumberland county,	do. do.	45 758.09	50 918 15	68 048.02	58 590.07	61 163 00
Keystone,	Locust Dale, Schuylkill county,	do. do.	2 730.10	7 726 17	2 709 06	26,025.18	60,672 00
Locust Run,*	Locust Dale, Schuylkill county,	do. do.					
Merriam,	Locust Summit,	do. do.	83 098 12	92.589.13	116 771 16	92 026 12	86 283 00
Locust Sprlng,	Locust Gap, Northumberland county,	do. do.	94 143.07	90 568 03	95 447 17	100 536.06	80 507 00
Potts,	Locust Dale, Schuylkill county,	do. do.	77 623.03	96 240 11	83 911 05	49,084 07	13 331.00
North Ashland,	Dark Corner, Columbia county,	do. do.	93,048.15	119 300 08	111,035 16	122 480.04	102,127.00
Preston, Nos. 1 and 2,	Girardville, Schuylkill county,	do. do.	41,437.07	63 491.14	68,028.15	84 914 08	
Preston, No. 2,	Girardville, Schuylkill county,	do. do.					58 119 00
Preston, No. 3,	Girardville, Schuylkill county,	do. do.	79,356 16	88 576 02	86 078.18	86 545.10	71 508 00
Tunnel,	Ashland, Schuylkill county,	do. do.	7.10	17 404.03	49 094 17	86 545.10	90,119.00
North Franklin, No. 1,	Trevorton, Northumberland county,	do. do.	63 180.05	93 370.10	86 382.11	20,195 16	33 817.00
North Franklin, No. 2,	Trevorton, Northumberland county,	do. do.				80,722.04	76 273 00
Locust Gap,	Locust Gap, Northumberland county,	do. do.	92 401.18	86 000 00	71 204.15	58 646.03	66 424.00
Peerless,	Shamokin, Northumberland county,	do. do.				22 155 07	19 194 00
Buck Ridge,	Shamokin, Northumberland county,	do. do.				5 712.04	6 398.00
Greenback,	Greenback, Northumberland county,	do. do.	25 885 03	30,358 08	42 514 15	66 780.10	45 629.00
Monitor,	Locust Gap, Northumberland county,	do. do.	119,942 13	126 062 03	131 546.11	145,295 09	93 543.00
Reliance,	Mt. Carmel, Northumberland county,	do. do.	81 634.07	104,964 12	118 840 16	104 262.19	91 127 00
Cameron,	Shamokin, Northumberland county,	M. R. R. and Mining Company,	160,853 13	175,655 16	164 506 11	181 279 11	207 933.06
Luke Fidler,	Shamokin, Northumberland county,	do. do.	118,643.03	140 291 06	124 973 15	121 562 10	121 826 02
Hickory Ridge,	Hickory Ridge, Northumberland county,	do. do.		23 311.06	23,640.16	26 395.03	32,017 06
Big Mountain,	Shamokin, Northumberland county,	Patterson & Llewellyn,	137, 442.11	178 959.06	168 769 15	178 894 17	139 742.05
Short Mtn. & Lykens Val.,	Wiconisco, Dauphin county,	Lykens Valley Coal Company,	171,4 7.05	198 188.17	195.095.10	201 632 16	185.922.19
Henry Clay, No. 1,	Shamokin, Northumberland county,	J. Langdon & Co.,	109,691.03	114 935.03	91 674.18	82 283.14	55,628.17
Neilson,†		do.					
Excelsior,	Excelsior, Northumberland county,	C. W. Kingsley & Co.,					137 096.06
Enterprise,	Enterprise, Northumberland county,	Thomas Baumgardner & Co.,					107 375.04
Stirling,	Carbon Run, Northumberland county,	Kendrick & Co.,	80,930.15	95 036 18	99 389.18	111.264.14	104,401.01
Royal Oak,	Shamokin, Northumberland county,	Tillel & Bro.,	2,197.01	4 806 00	3 850.00	4 696 18	3 148 10
Williamstown,	Williamstown, Dauphin county,	Summit Branch Coal Co.,	227,169.06	279,790.01	342 218.09	364 866 07	359,127.19
Lancaster,	Coal Run, Northumberland county,	Smith & Kelser,				21 893.07	19,900.05
Black Diamond,	Mt. Carmel, Northumberland county,	Schwenk & Co.,	26 125.15	7 568.19	21,329.11	32 330.00	33 007.16
Centralia,	Centralia, Columbia county,	Lewis A. Riley & Co.,		10,662 01	88 283.00	125 438.11	151,983 18
Logan,	Centralia, Columbia county,	do.			231 169 00	225 614.15	200,795.18
Hazle Dell,‡	Centralia, Columbia county,	do.	16 270.06	29 000 00	7 368.01		
Mt. Carmel,	Mt. Carmel, Northumberland county,	Montellus, Relghter & Co.,	53.000 00	135 612.14	170 642 18	162 649 12	146,379 07
Big Mine Run,	Big Mine Run, Northumberland county,	J. Taylor & Co.,	111 683.12	134 525 01	132 362 11	131,572 03	138,656 12
Continental,	Centralia, Columbia county,	Lehigh Valley Coal Company,	79,598.09	62 506 06	16 541 17	63 831.01	60 131 17
Pennsylvania,	Green Ridge, Northumberland county,	Union Coal Company,	105,882.13	118,837 00	125,167.01	118 733.14	120 249.05

Hickory Swamp,		do.				5 860.05	28 740 04
Bellmore,	Mt. Carmel, Northumberland county,	S. S. Bickel & Co.,			6 805.07	52 601 06	97 684 17
Morris Ridge,	Conyngham twp., Columbia county,	Isaac May & Co.,		45 507 03	55 490 06	79,089.03	86 112.02
Garfield,		William H. Douty,					4 382.16
Star,	Shamokin, Northumberland county,	Charles Hutchinson,				4,603 00	4 940.04
Big Run Gap,	William's Valley, Dauphin county,	James Fennel,	2,568 00	2,628 00	2,498 06	2 365 00	1,940.06
Pioneer,		David Vaughan,	2,373.00	958.03	449.00		737.00
Ranch Gap,	Valley View, Schuylkill county,	Israel Nye,	896.17	11, 195.00	1,088 04	1,353.15	1,836 00
Ben Franklin,	Dountyville, Northumberland county,	Douty & Baumgardner,	38,411.16	32 158 06	31,006 16	34 220.61	14 422.01
McAuley,	Beaver township, Columbia county,	Allen Mann,				639 00	353 00
Big Mountain, No. 2,	Mt. Carmel, Northumberland county,	John Q. Williams,	200 00				1,255 00
Montana,*		Lehigh Valley Coal Co.					
Reno§,		do.					
Peerless,	Shamokin, Northumberland county,	Cruikshank & Co.,	29 231 11	46,016.03	47,824 18	28 212.17	
Buck Ridge,	Shamokin, Northumberland county,	May, Audenried & Co.,	53,768.05	30 015.06	66,555 03	11 162.09	
Bear City,		John Q. Williams,	413.00	2 450.00	2,000 00	2,860.00	
Carson,	Shamokin, Northumberland county,	M. E. Robinson,	11,460 02	14 466 02	8 070 04		
Gordon,	Mahanoy Valley, Northumberland co.,	William Cleaver,				2,061 04	
Vaughan,	Ashland,	D. Vaughan,	2,373.00			871 00	
Glen City,	Glen City, Columbia county,	J. H. Losee,	11 128.18				
Montana, No. 2,	Montana, Columbia county,	A. H. Church,	11 276.19	42,941.06	37,884.01		
Franklin, No. 2,	Barry township, Schuylkill county,	William Cleaver & Co.,	8 966 00	29,917.19	23 368 10		
Shamokin,		G. Tibbetts & Co.,	2 197 01				
Montana, No. 1,	Centralia, Columbia county,	D. Beaver,	330.07	73 10			
No name,		Samuel Myers,	70.00				
Ashland Estate,	Ashland,	Alfred Bancroft,	24 10				
Monroe,	Montana, Columbia county,	Montana Coal Company,				9,960.00	
Excelsior,	Excelsior, Northumberland county,	Excelsior Coal Co.,	104,308.09	142 481.11	125 464 14	138 429 15	
Enterprise,	Enterprise, Northumberland county,	Enterprise Coal Company,	79 017.08	141 820.11	127,019.17	117,592.18	
Total shipped to market,			3,285 216 15	4,181 696.17	4 329 054 00	4 440 917.08	4 280 487.03
Consumed or sold at collieries,			176,155.03	250,904.16	259,745 04	272 245.04	254,564.10
Total production,			3,461,371.18	4 432 601.13	4 588 799.04	4 813 162.12	4 535.051.13

* Pumping water. †Sinking shaft; 35 men employed sinking and working outside. ‡See Centralia colliery. Coal prepared at Centralia colliery breaker. §Driving tunnel.

OMPARATIVE STATEMENT OF CASUALTIES, TONNAGE, AND EMPLOYEES OF THIRD, OR SHAMOKIN DIVISION OF MINING DISTRICT OF SCHUYLKILL.

YEAR.	Killed.	Injured.	Total.	Total number of employés.	Number of employés to each casualty.	Total number of tons of coal mined.	Number of tons of coal mined to each fatal casualty.	Number of tons of coal mined to each non-fatal casualty.	Ratio of tons of coal mined to each casualty.	Number of tons of coal mined to each employé.
80, ...	34	124	158	11,616	73.5	3,461,371.18	101,805.01	27,914.06	21,907.08	211.18
81, ...	48	147	195	11,865	60.8	4,432,601.13	92,436.00	30,154.00	22,731.00	373.00
82, ...	44	182	226	12,973	57.4	4,588,799.04	104,290.00	25,213.00	20,304.00	353.00
83, ...	64	170	234	14,588	62.4	4,813,162.12	75,205.14	28,312.15	20,141.14	329.18
84, ...	56	174	230	15,568	67.3	4,535,051.13	80,983.01	26,063.10	19,717.12	291.06
Total, ...	246	797	1,043	66,610	321.4	21,830,987.00	454,629.16	137,657.11	104,801.14	1,559.02
Average, ...	49$\frac{1}{5}$	159$\frac{3}{5}$	208$\frac{3}{5}$	13,322	64$\frac{7}{25}$	4,366,197 08	90,925.19	27,531.10	20,960.07	311.16

LUZERNE AND CARBON COUNTIES.

MIDDLE DISTRICT.

OFFICE OF INSPECTOR OF MINES,
WILKES-BARRE, PA., *March 25, 1885.*

To His Excellency ROBERT E. PATTISON,
Governor of Pennsylvania:

SIR: In accordance with the act of March 3, 1870, entitled "An act to provide for the health and safety of persons employed in coal mines," I have the honor of presenting my fifth annual report, which contains the usual tables and lists of fatal and serious casualties. It also contains brief notes on the condition of the mines, the cave at the Enterprise colliery, the application of theoretical knowledge in mining, the effects of the law of diffusion of gases in mines, an apparatus for producing carbonic acid gas for protection in case of fire, a new head structure for sinking shafts, with plans, and a brief description of the colliery improvements, and of the fatal accidents which occurred during the year 1884.

The total number of serious casualties was 258, of which 97 were fatal. A number of those reported as non-fatal were of a very serious nature, so that doubt was entertained of their recovery.

The number of widows left was forty-eight, and of orphans one hundred and twelve.

The number of persons employed in and about the mines was increased over the number employed in 1883, so that at the end of 1884 there were 24,357 persons altogether employed, showing an increase of 2,882 over the number employed in 1883.

The total quantity of coal mined in 1884 was 7,881,985 tons, including coal shipped to market, coal sold for domestic purposes at the mines, and coal used for generating steam; but it does not include the culm used for that purpose. The quantity of coal mined for these purposes in 1883 was 7,667,221 tons, showing that an increase of production equal to 214,764 tons took place in 1884. This increase was effected chiefly by the collieries of the Susquehanna Coal Company. The average number of days worked

by the breakers was 203.57, while in 1883 they worked 223 days, and yet the production is larger by 214,764 tons, as stated. This shows that the producing capacity of this district was very largely increased, and that, by working 300 days, the large amount of 11,615,400 tons could be mined with the number of persons in employ during 1884. The collieries of the Susquehanna Coal Company worked 293 days, but the others only worked from 178 to 194 days, having been thrown idle more than one third of the time. Owing to so much idleness, the year 1884 has been a very trying one for those persons who were dependent on their labor at the mines for support, and many have suffered the need of usual comforts.

This report is respectfully submitted by

Your obedient servant,

G. M. WILLIAMS,
Inspector of Mines.

Total Amount of Coal Mined During the Year 1884.

Lehigh Valley Coal Company,	623,343.8
Lehigh and Wilkes-Barre Coal Company,	1,598,739
Delaware and Hudson Canal Company,	1,381,322.85
Susquehanna Coal Company,	1,299,323.90
Wyoming Valley Coal Company,	403,031
Miscellaneous coal companies,	2,576,224.55
Total of all coal companies,	7,881,985.10

Number of Fatal Accidents and Amount of Coal Produced per Life Lost.

NAMES OF THE COMPANIES.	Number of lives lost.	Coal mined per life lost —tons.
Lehigh Valley Coal Company,	13	47,949
Lehigh and Wilkes-Barre Coal Company,	15	106,582
Delaware and Hudson Canal Company,	10	138,132
Susquehanna Coal Company,	22	59,060
Wyoming Valley Coal Company,	4	100,757
Miscellaneous coal companies,	29	88,835
New collieries not yet producing coal,	4	
Total—all coal companies,	97	81,257

Number of Employés and Tons of Coal Mined per Person Employed.

NAMES OF THE COMPANIES.	Number of persons employed.	Coal mined per employé —tons.
Lehigh Valley Coal Company,	1,904	327.38
Lehigh and Wilkes-Barre Coal Company,	6,643	240.66
Delaware and Hudson Canal Company,	3,651	378.34
Susquehanna Coal Company,	2,954	439.85
Wyoming Valley Coal Company,	1,262	324.11
Miscellaneous coal companies,	7,583	339.73
Total—all coal companies,	23,997	328.45

There were three hundred and sixty persons employed at the close of the year in new shafts, adding which to the above number makes the total number of persons employed in this district twenty-four thousand three hundred and fifty-seven, an increase of two thousand eight hundred and eighty-two over the number employed in 1883.

Average Number of Days Worked and Tons of Coal Mined per Day.

NAMES OF THE COMPANIES.	Average days in operation.	Tons of coal mined per day.
Lehigh Valley Coal Company,	181.91	3,426.66
Lehigh and Wilkes-Barre Coal Company,	178.85	8,938.99
Delaware and Hudson Canal Company,	194.06	7,118.01
Susquehanna Coal Company,	293.63	4,425.03
Wyoming Valley Coal Company,	182.16	2,212.16
All miscellaneous coal companies,	190.81	13,501.51
Total—all coal companies,	203.57	38,718.79

Classification of Fatal and Non-Fatal Accidents.

CAUSES OF ACCIDENTS.	Number killed.	Number seriously injured.
By explosions of carbureted hydrogen,	4	22
By falls of roof and coal,	37	49
By falling down shafts,	8	
By cars underground,	18	39
By explosions of powder and blasts,	11	17
Miscellaneous causes inside,	4	21
Miscellaneous causes—outside,	15	13
Totals,	97	161

Number of widows, forty-eight; orphans, one hundred and twelve.

TABLE No. 1.—Showing the number of each class of employees, number seriously and fatally injured, per centum of each class injured and killed, and per centum of each class fatally or seriously injured during 1884.

	PERSONS EMPLOYED UNDERGROUND.						PERSONS EMPLOYED ON SURFACE.						
	Bosses.	Miners.	Laborers.	All classes of company men.	Drivers and runners.	Door-boys.	Bosses.	Mechanics.	Head and platemen.	All classes of company men.	Drivers and runners.	Slate-pickers.	Persons employed in new shafts.
Number of each class of employees,	79	5,388	5,004	2,003	2,039	974	67	576	633	2,111	256	4,867	360
Number seriously injured,	. . .	68	34	13	28	6	. . .	1	1	7	1	1	2
Number fatally injured,	1	37	20	8	9	4	. . .	3	. . .	7	1	4	4
Per centum injured,	. .	1.26	0 67	0.54	1.33	0 61	. . .	0.17	0.15	0.33	0.39	0.02	0.55
Per centum fatally injured,	1.26	0.64	0.39	0.39	0.43	0 41	. .	0.52	. . . .	0.33	0 39	0.08	1.11
Per centum either killed or injured,	1.26	1.91	1.07	0.94	1 76	1.02	. . .	0 69	0.15	0.66	0.78	0 10	1.66

TABLE No. 2.—Showing tons of coal mined, number of persons employed, number of days worked by breakers, number of lives lost, and tons of coal mined per life lost, for each year from 1871 to 1884, inclusive.

YEARS.	Tons of coal mined each year.	Average number of persons employed.	Average number of days in operation.	CLASSIFICATION OF FATAL ACCIDENTS UNDERGROUND.						On surface.	Total lives lost.	Tons of coal mined per life lost.
				Explosion of Oil gas.	Falling of roof and coal.	Falling down shafts.	Crushed by mine cars.	Explosions of powder and blasts.	Miscellaneous causes.			
1871,	3,000,000	9 870	...	1	13	2	6	1	24	6	53	56 000
1872,	3 253 000	9 867	....	8	15	3	7		4	3	40	81,560
1873,	4,232,000	11 325	....	6	11	3	13	4	...	9	46	92 000
1874,	4,513 847	13,576	.....	9	17	3	9	5	7	7	57	80,000
1875,	4 261,263	15,008	.....	6	19	14	5	10	1	8	63	67,629
1876,	4,615,386	14 317	.....	7	23	1	4	13	4	3	55	83,916
1877,	4,080 377	14 073	.....	1	25	2	1	4	3	2	38	107,377
1878,	4 082 372	13,045	...	7	14	....	5	4	3	3	36	113 399
1879,	6,310,256	15 582	.	12	30	....	15	5	1	2	65	97 080
1880,	5 708,813	15 987	187.43	8	11	4	12	12	7	7	51	111,937
1881,	7,021,508	16,808	221.58	10	28	3	10	7	3	18	79	88,879
1882,	7 059,358	18 339	238.97	10	22	4	16	8	8	5	73	96 703
1883,	7 667,221	21 475	223 69	7	25	12	15	14	6	10	89	86 148
1884,	7,881,985	24 357	203 57	4	37	8	18	11	4	15	97	81 257
Totals,	73,684,386	....	....	96	290	59	136	88	75	98	842	87,511

General Condition of the Mines.

Eighty-four openings, including the new shafts and slopes in progress of sinking, were in operation in this district during the year 1884. All of these except eleven produced more or less coal for the market. The underground workings are maintained in about the same condition as they were upon my previous report for the year 1883, excepting that a marked improvement was made in some of the mines in which the ventilation was not then satisfactory. A fan was erected in the West End mine, which improved the ventilation very effectively. The workings are now kept clear of smoke, and are much healthier for the workmen therein. Since the present proprietors began operating the Black Diamond colliery, in Luzerne borough, the colliery has been very effectively improved, and a new shaft is now being sunk upon which a new fan is to be erected to produce a more effective ventilation. I have complained frequently of the ventilation of this mine, but under the old management the required improvements were continually deferred. Now the improvements in progress will shortly bring the mine to a satisfactory condition.

The Conyngham and Baltimore Slope mines, both of which were seriously damaged by inundation of water the latter part of 1883, have since been restored to their former order. The second openings, and all matters pertaining to the safety of the men employed therein, are satisfactory.

At the Warrior Run colliery the ventilation, for some time past, was rather small, but they have succeeded in increasing its volume to a small extent by enlarging the outlet air-passages. Now it is in a fair condition; still, the margin is small, and they will have to be watchful, or, as the workings advance, it may soon become inadequate again.

The air-ways in every mine, where practicable, should be made of sufficient area to have the cars follow the miners. The old system of wheeling the coal in a wheelbarrow should be abandoned; it is both laborious and expensive, and the miners very reluctantly drive the air-ways wider than is necessary to pass the wheelbarrow, where such system is in vogue. The inevitable consequences of having small air-ways is a small quantity of air for ventilation.

At the Old Slope Franklin colliery a marked increase of ventilation was effected by making a change in the construction of the outlets of the double fan, and also by enlarging the main air-ways in the mine. This mine is now in much safer and better condition generally than it was at the beginning of the year 1884. Other improvements are contemplated, which, if made, will still enhance the safety and producing capacity of this mine.

The mines of the large companies, those of the Lehigh Valley, Lehigh and Wilkes-Barre, Susquehanna Coal Companies, and Delaware and Hudson Canal Companies, are generally in good condition. I find, though, that even in the mines of these companies the ventilation is conducted through the faces of the workings better in the gaseous mines than in the ones producing no gas. The bosses of some of the mines in which no explosive gases

are evolved become rather too indifferent to the ventilation, and allow the air to return on the gangways without passing the faces of the breasts, where, as is well-known, it is mostly wanted. The only reason for this is that, to keep the current at the faces, it requires check-doors, and a few air-stoppings. These, of course, cost a small sum of money, but the delay caused by having smoky passages for drivers and others to work in, costs fully as much, besides the increased danger to their lives and limbs which arises therefrom. I find a tendency to be thus indifferent to a proper distribution of the air through the faces in some of the Delaware and Hudson mines on the west side of the Susquehanna river, more especially in those mines where no fire-damp is emitted. The same carelessness is extant in a number of the mines operated by the small companies. Still, in viewing the mines generally, a rapid progress is being made in the ventilation and general condition of the mines, the producing capacity is increased, and to accomplish that, wider passages, better and cleaner roads, larger quantity of air, and better and more rigid discipline are required and maintained, and these, together, produce far cheaper, safer, and better system of mining coal.

A Cave at the Enterprise Colliery.

During the night, September 4, 1884, the workings of the Enterprise colliery suddenly, and very unexpectedly, began to squeeze. The pump-runner, who was the only person in the mine, heard it, and ran out to inform the officials. A gang of men were soon set to work to bring the mules out, but, while this was being done, and while a number of the mules were yet in the mine, the whole extent of the workings below the level of the shaft to a point some distance above that closed in, and, simultaneously, the atmosphere of the mine became explosive. The pillars, by being crushed, relieved all the occluded gas, which was emitted in such quantities that it caused the air to become explosive everywhere from the top of the upcast down to the mine.

The abandoned workings of the Hillman seam, directly over this portion of the Enterprise workings, were full of water, which, in a week or two after the cave, was discovered to have run down through the crevices and filled the space caved below the level of the shaft. In this time, gangs of men were employed to re-open the gang-ways leading to the plane and to the slope, but, upon discovering the water filling, their efforts had to be concentrated on pumping and hoisting the water out. Both cages and pumps were employed for that purpose, and have been so employed to the date of this writing, and this means appears, at present, to prove inadequate. The company, in the meantime, has concluded to put in more powerful machinery for both pumping and hoisting. The present old single hoisting engine is to be changed, and a pair of direct-acting hoisting engines of much greater power is to be put in its place. When the new machinery is set to work, they think that the upper portion of the mine can, in a short time, be opened and a considerable quantity of coal obtained. In the

meantime, the lowest seams will be opened and prepared to put coal out. The suddenness of the cave is rather a mystery, and is explained only on the presumption that the distance between the seams worked, viz: the upper and lower split of the Baltimore, was small, and the pillars in both, perhaps, not being directly over each other, the intervening rock gave way in those portions of the old workings where the props had rotted away. Consequently, when the crush began, it naturally spread very rapidly over the excavated parts until some point strong enough to stand the pressure of breaking the superincumbent strata was reached to stop its further progress.

This colliery gave employment to about three hundred and fifty persons, who all resided in the vicinity of the colliery, and the closing of the mine has been a great loss to them and their families. It is hoped, however, that ere long the mine will again be in operation, and that all can return to work in the immediate vicinity of their homes.

The Application of Theoretical Knowledge to the Practice of Coal Mining.

It is evident that the theoretical knowledge of the principles governing the various branches of work, and the laws governing the ventilation of mines, is not appreciated, or at least is not valued so highly as it should be by the proprietors of coal mines. It is also evident that those foremen who possess such knowledge, coupled with practical experience, are the most progressive. They are the persons who advance new methods, devise new applications, and are best prepared to cope with new emergencies. The methods and appliances used in the mining of anthracite coal have been greatly improved during late years, but all these improvements are the product of persons who possess both practical and theoretical knowledge of the laws relating to the requirements of this industry. A man's life is too short, and his practical experience too limited, to obtain therefrom the requisite knowledge and qualities necessary to cope successfully with the varied difficulties and dangerous situations liable to be met in a coal mine. The mine foreman, then, should read and learn from the experience of others. The operators and proprietors of coal mines should choose men for such positions who not only are practical, but who also read and study the laws relating to the working of mines. A persistent study of the principles of all matters connected with coal-mining ought to be encouraged and appreciated more than it appears to be at present. There are bosses of twenty years' experience who have never seen fire-damp, have not seen a division of air-currents, and have not seen any method of circulating the air-currents besides that exercised in their own mine, and their knowledge of mining is thus limited to what they have learned in their own very limited experience as foreman. Yet they have such unlimited confidence in their own system of working that it is impossible to impress them with anything new as being an improvement; they have no confidence in "book-learning," and believe they have acquired all

the knowledge worth knowing about coal-mining. Such men are valuable only as long as the mine remains in its primitive condition. If explosive gases should appear and a larger volume of air be required, they are unfit to manage the work, and it falls upon others to provide for these difficulties. Frequently, on such occasions, serious blunders are made, causing great expense and loss of life. On some occasions serious accidents have occurred under the management of good practical men that could easily have been avoided if they were in possession of the requisite theoretical knowledge. The lessons learned by practice are good and effective, but they are frequently learned at a fearful cost.

By all means, the operator of a colliery should encourage his foremen to increase their knowledge relating to their work; he should procure books and keep them at his office for his foremen's use, and impress on them the necessity of acquiring a thorough knowledge of their work.

The Law of Diffusion of Gases in Coal Mines.

In order to comprehend the various phenomena of the gases known as fire-damp, black-damp, and atmospheric air, in the ventilation of coal mines, it is essentially necessary that the law which regulates the diffusion of gases be understood, and especially so by the persons who have charge of gaseous mines. Of all laws relating to gaseous matter, the *law of diffusion* is the one, which, perhaps, has the most important influence on gases found in coal mines. From an erroneous belief, rather generally entertained, regarding the mutual relation and natural disposition of gases, serious mistakes arise, which sometimes lead to serious results. These errors are condoned, perhaps, because they are not understood to be errors, and the causes, as well as their effects, are attributed to some mysterious freak of nature.

It is a well known-fact that when accumulated bodies of gases are found standing in mines, those whose density is less than the density of atmospheric air are found at the roof of the highest points in the excavated workings, and those whose density is more than the density of atmospheric air are found along the floor and lowest points of the workings. Thus, it appears that gases, like liquids, arrange themselves in layers, one above the other, according to their respective densities.

This phenomena of gases, so frequently apparent in mines, have created erroneous and misleading impressions on the minds of many of the persons who daily witness them; consequently the mistakes referred to occasionally arise. In respect to liquids it is generally true that when poured together they arrange themselves in layers according to their densities; but in respect to gases this occurs only to a certain extent and under certain conditions. The law known as the law of diffusion of gases displays a very important influence in the distribution of gaseous matter in coal mines, and its mysterious effects need to be more generally understood by employés of coal mines. The effects of the diffusion of gases are very clearly demonstrated in the atmosphere, which is constituted of nitrogen and

oxygen mixed together in the proportion of four fifths of nitrogen to one fifth of oxygen. It contains also about four parts in ten thousand of carbonic acid. If these gases were arranging themselves in layers according to their densities or weights as liquids generally do, the carbonic acid would all settle and form an ocean of dense irrespirable atmosphere on the surface of the earth, in which no creature could live. Above this the oxygen would rest, and above that again the nitrogen.

The relative densities of carbonic acid is twenty-two; oxygen sixteen, and of nitrogen fourteen; therefore, their relative weights are the same, and although varying thus in density, they are found mixed in the said, and nearly unvarying, proportion, at every accessible point on the surface of the earth. This beneficial condition of the atmosphere is effected by the natural law of diffusion of gaseous matter. In consequence of the absence of cohesion among the particles of which gases and vapors consist, mixture take place amongst these bodies very freely; their particles never rest, but are continually moving and intermixing, and when once an equal intermixture has been effected it continues to be permanent and uniform.

The power of diffusion possessed by gas is surprisingly strong, so that it operates rapidly even against the force of gravity, and, contrary to what a superficial consideration might lead us to suppose, the more widely the gases differ in density, the more rapid is the process of intermixture.

The rapidity with which this *diffusion* occurs varies with the specific gravity of the gases, and the velocity, inversely as the square root of their densities. If two jars were filled, one with hydrogen gas, whose density is one, and the other with carbonic acid gas, the density of which is twenty-two, and if these jars were placed at a distance, one above the other, and connected by a long tube, the hydrogen jar being placed uppermost, in the course of a few hours the carbonic acid would find its way into the upper, whilst the hydrogen would pass downwards into the lower one, and ultimately the gases would be equally intermixed throughout both jars. The difference in the weight of these two gases is greater than the difference existing between water and mercury, and yet while placed in such a position the superior power of the law of diffusion overcomes the force of gravity, and the two gases finally mix and remain so mixed.

Graham determined the law which regulates the velocity of gaseous diffusion, and he seems to be recognized as an authority on this question. He determined by experiment that the diffusiveness, or *diffusion volume*, of a gas is in the inverse proportion of the square root of its density; consequently, the squares of the times of equal diffusion of the different gases are in the ratio of their specific gravities. Thus, if we take the density of air to be 1, the square root of that density is 1, and its diffusion volume also is 1; the density of hydrogen is 0.0692; the square root of that density is 0.2632, and its diffusion volume $\frac{1}{0.2632} = 3.7994$, showing that while one volume of air diffuses, 3.7994 volumes of hydrogen diffuse under the same conditions.

The following table, prepared by Graham, gives the specific gravity of several important gases found in coal mines, the square root of the density or ratio of the times required for the diffusion of equal volumes, if the time for air equals 1; the reciprocal of that square root, or calculated diffusiveness of the gas, and the actual numbers obtained by experiment when the barometric pressure and the temperature were the same for each gas.

Diffusion of Gases.

Gas.	Density.	Square Root of Density.	$\frac{1}{\sqrt{\text{Density.}}}$	Velocity of Diffusion. Air = 1.
Hydrogen,	0.06926	0.2632	3.7994	3.83
Marsh gas,	0.559	0.7476	1.3375	1.344
Steam,	0.6235	0.7896	1.2664	
Carbonic oxide,	0.9678	0.9837	1.0165	1.0149
Nitrogen,	0.9713	0.9856	1.0147	1.0143
Oxygen,	1.1056	1.0515	0.9510	0.9487
Sulphureted hydrogen,	1.1912	1.0914	0.9162	0.95
Carbonic acid,	1.52901	1.2365	0.8087	0.812
Olefiant gas,	0.978	0.9889	1.0112	1.0191

Under the effects of this law of diffusion, gases which have been apparently standing unaltered for several days, and sometimes for weeks or months, in some part of a mine, disappear unexpectedly even when no change to that effect is made in the ventilation. This occurs at the time when the gases evolving from the strata are exhausted, or when the rate of their effusion becomes less than the rate of their diffusion. When a body of fire-damp is brushed from a breast or from any place in a mine, or when this gas and air have by any means become mixed, they do not again separate, but continue to diffuse. In the meantime, the air may be so charged with marsh gas that the addition of a very small quantity would render the whole mixture explosive. It only requires one volume of carbureted hydrogen, or marsh gas, mixed with about fifteen volumes of atmospheric air to produce an explosive mixture.

It is commonly supposed that explosive gases cannot accumulate in shafts where the tops of such shafts are open or uncovered. The prevailing presumption is that if any carbureted hydrogen is emitted, its density being only about one half the density of air, it rapidly ascends and diffuses into the air of the atmosphere under the force of gravity. This is generally true, but there are conditions under which an accumulation may, and has, oftentimes taken place. In shafts where a very gaseous seam of coal or strata is cut, and the air-current passing feebly, or only of sufficient force to counteract the force of gravity, an accumulation is inevitable in all places where the quantity of gas evolving from the strata is greater than the quantity diffusing into the air. Under the same conditions dangerous gases accumulate in dip-gangways and on inclined passages even when a current of air is passing by the top of such passages, but this does not

occur frequently only in mines where very large volumes of gas are emitted.

It is very evident, therefore, that the effects of the law of diffusion should be familiar to all persons having charge of coal mines, and if more attention is given to this subject, after reading this article, the writer will have accomplished all he desired in writing it for this report.

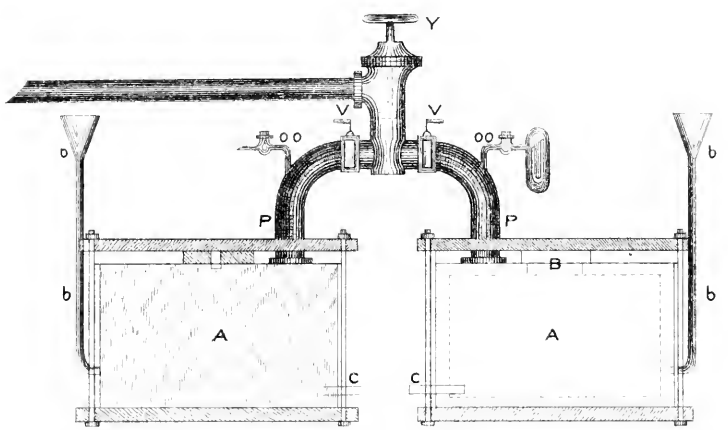
An Apparatus for Producing Carbonic Acid Gas for the Purpose of Extinguishing Fires in Mines.

In my annual report for the year 1882, a lengthy description of the methods adopted to extinguish fires in mines was given, in which reference was made to a fire extinguished by carbonic acid gas in the Wynnstay colliery, Rhuabon, North Wales, January, 1874. I now present in this report a plan of the apparatus used for the production of the gas, taken from a report of the said fire written by Mr. George Thomson, who had charge of the colliery. AA are two strong wooden boxes, six feet square by two feet deep, lined inside with sheet-lead, technically called chemical lead, so as to resist the action of the acid on the wood; *bb* are pipes provided with taps, through which the hydrochloric acid was poured into the boxes as required. BB are lids covering man-holes, through which the limestone, broken very small, was charged. CC are pipes with plugs leading from the bottom of the boxes for discharging the residuum, chloride of calcium, after the decomposition of each charge. PP are cast-iron pipes with separate valves *vv*, and a valve Y common to both. OO are small pipes, with taps for allowing the air to be expelled from the boxes, and also for attaching a mercury gauge to indicate the pressure of the gas during the operation. Whilst one box was giving off gas the other was being charged, and thus a continuous flow of gas was kept pouring into the mine.

The charge consisted of four hundred and fifty pounds of common limestone, broken very small, and it required, generally, about one hundred and twenty gallons of hydrochloric acid of 1.12 strength to decompose it. The limestone was put in the box first, and the man-hole was closed and the cover fastened down, then the acid was poured in through the pipes *bb*. In the meantime, the mercury gauge was watched and the quantity of acid poured in was regulated to maintain a uniform pressure of about three inches of mercury. Each charge produced, by calculation, about thirty-two hundred and forty cubic feet of incombustible gas. The time when each charge was exhausted was easily discovered by the reduced pressure indicated on the gauge, when, immediately, the valves were closed, the residuum withdrawn, and the charge renewed. Thus the operation was repeated, alternately, from each box as long as the gas was needed. The region of the fire was inclosed by thick brick walls, and the gas was forced in through pipes leading from the generators. Altogether, they put down about one hundred and sixty-two thousand cubic feet of carbonic acid gas, and the officials of the mine believe it had a very important effect. The gas collected from all the pipes and through the different stoppings, or walls, from

AN APPARATUS

FOR PRODUCING CARBONIC-ACID GAS.



SCALE ¼ = 1 FOOT.

A A = TWO WOODEN BOXES.

B B = COVERS FOR MAN HOLES.

C C = PIPES FROM BOTTOM OF BOXES.

P P = CAST IRON PIPES.

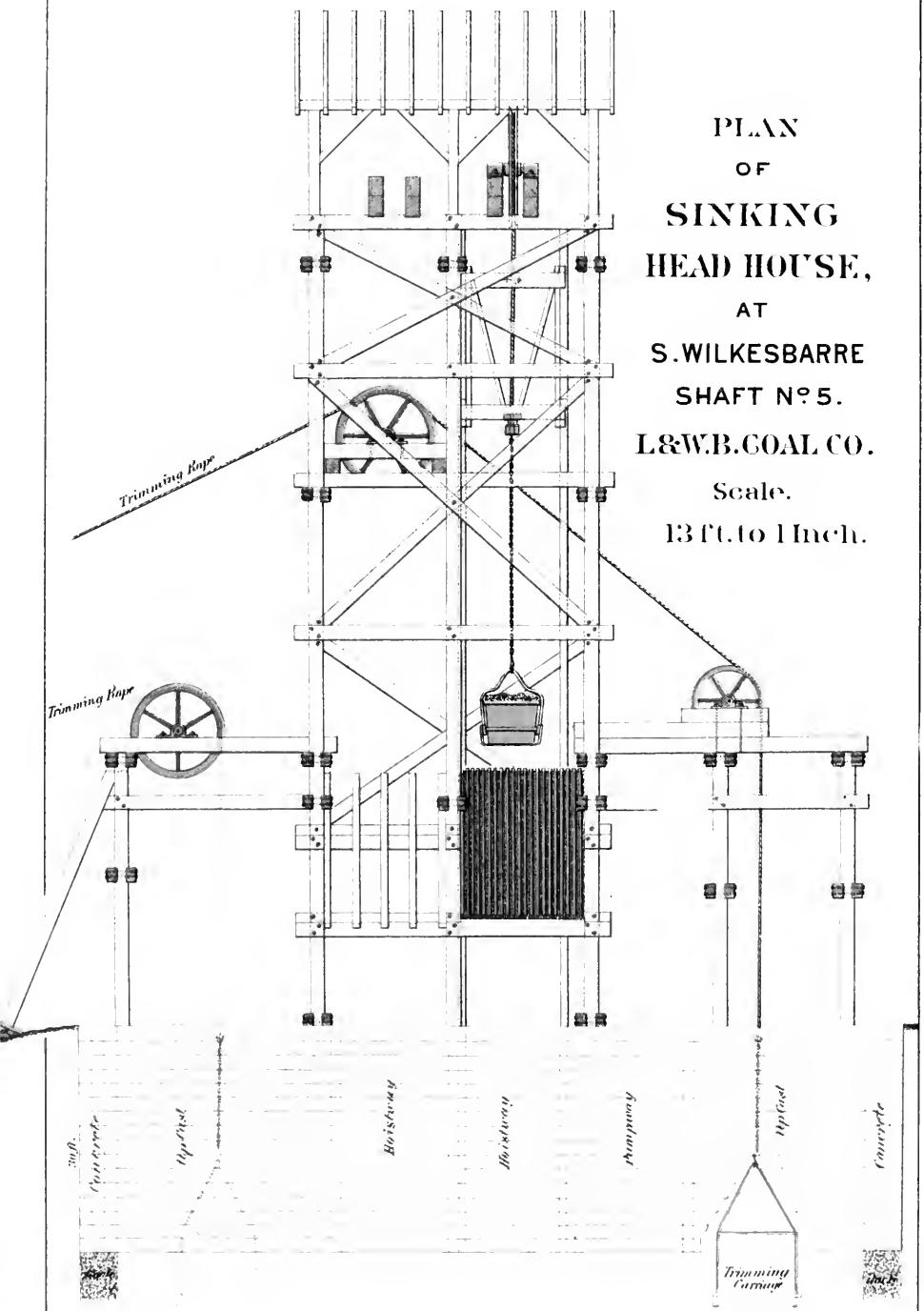
V V = VALVES.

Y = VALVE COMMON TO BOTH PIPES.

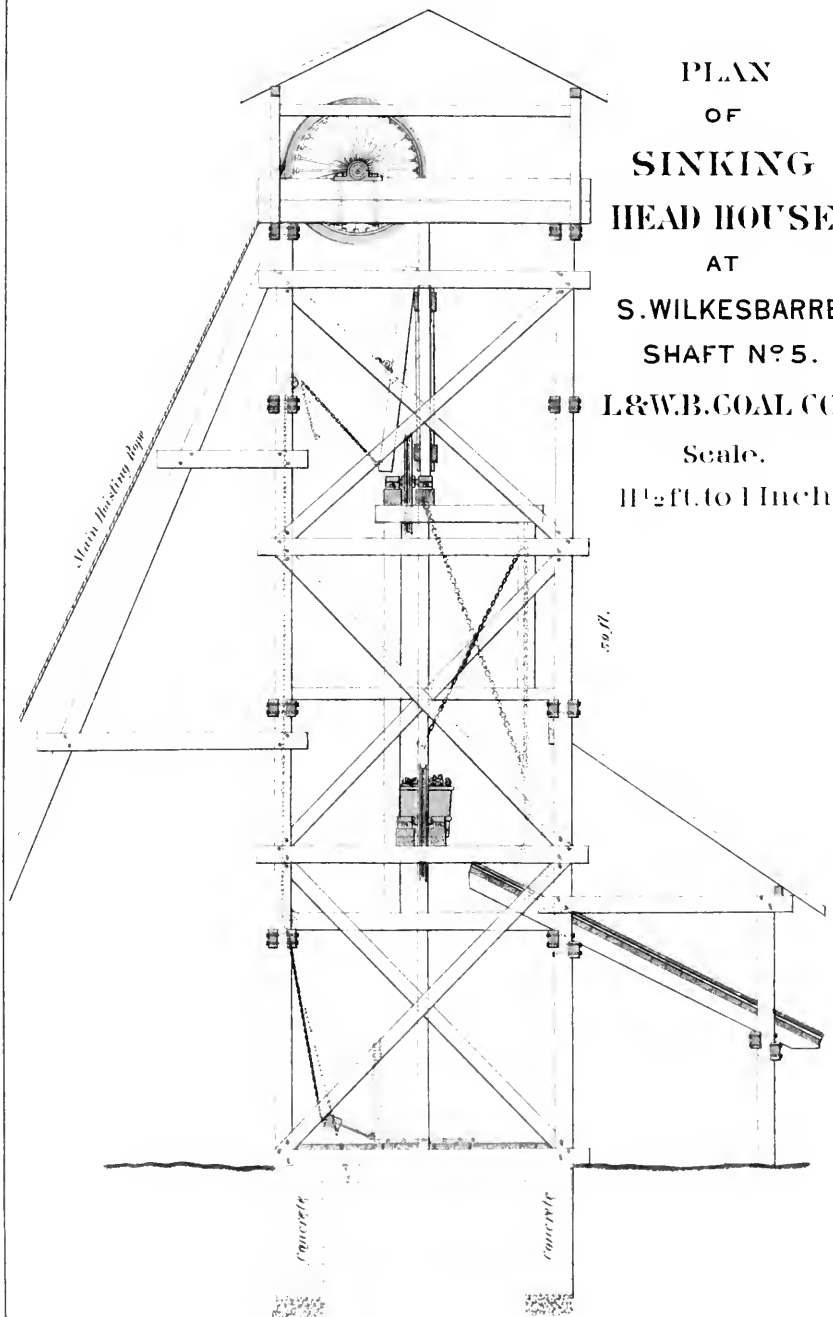
O O = SMALL PIPES WITH TAPS.

PLAN OF SINKING HEAD HOUSE, AT S. WILKESBARRE SHAFT No 5. L&W.B.COAL CO.

Scale. 13 Ft. to 1 Inch.



Side View



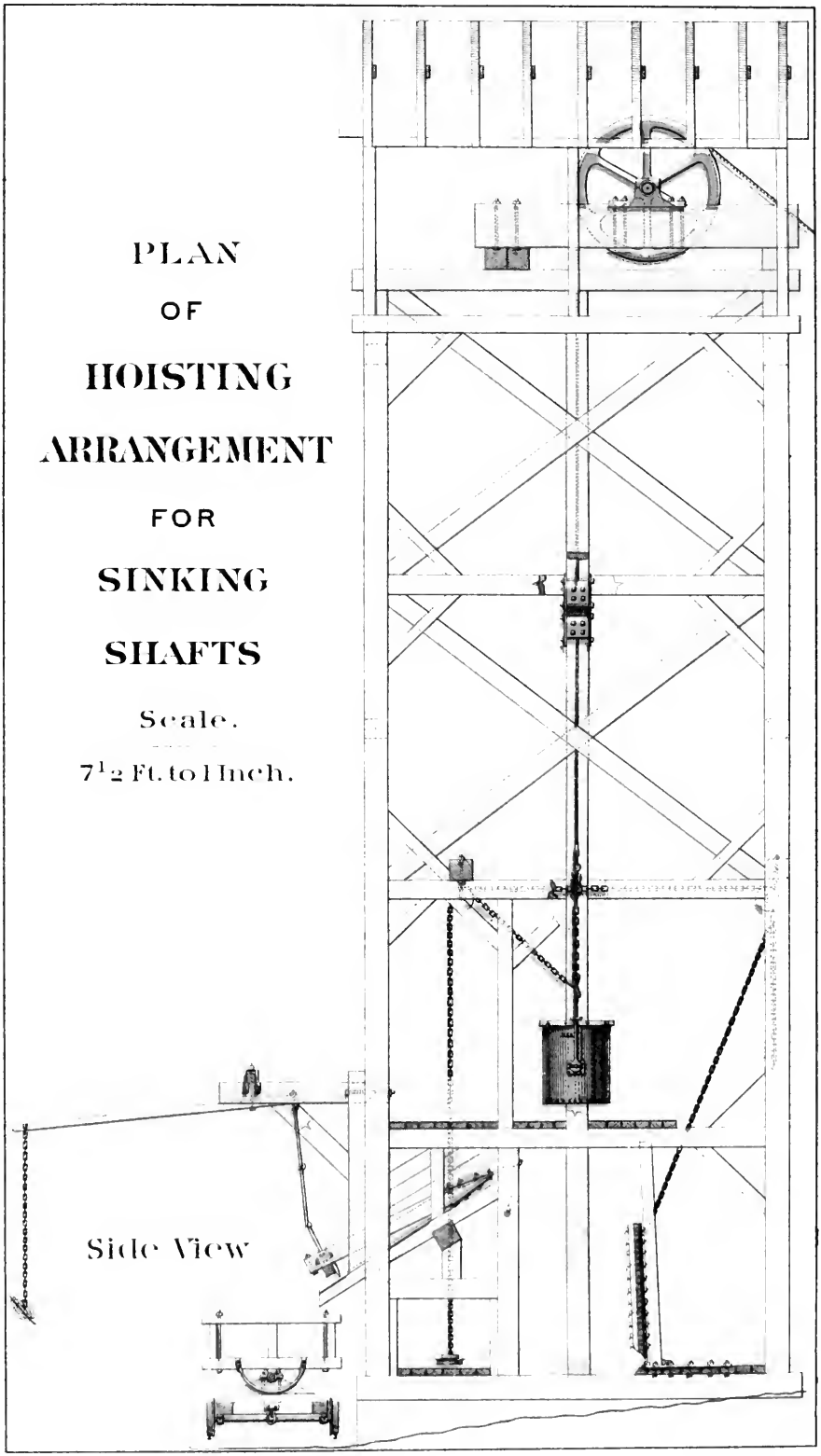
PLAN
OF
SINKING
HEAD HOUSE,
AT
S. WILKESBARRE
SHAFT Nº 5.
L&W.B.COAL CO.
Scale.
1 Inch to 8 ft.

End View

PLAN OF HOISTING ARRANGEMENT FOR SINKING SHAFTS

Scale.

7 1/2 Ft. to 1 Inch.



Side View

PLAN

OF

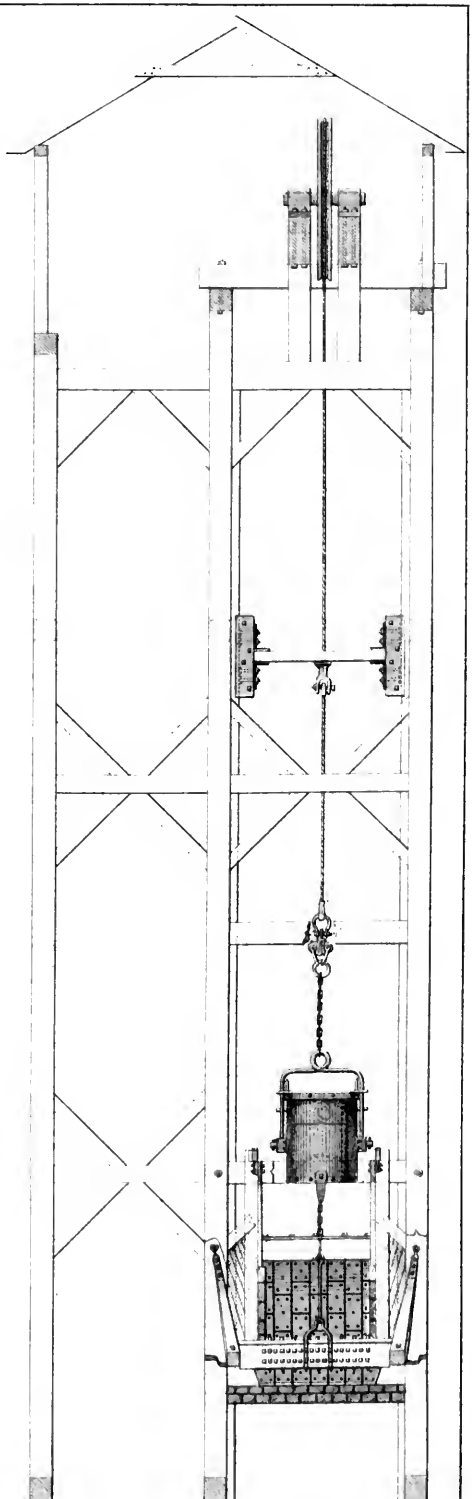
HOISTING ARRANGEMENT

FOR

SINKING SHAFTS

Scale.

7½ Ft. to 1 Inch.



End View

time to time, would not support combustion, and the temperature within the stoppings continued very moderate.

It may be interesting to state here that, in analyzing the gases within the stoppings, they found that a mixture of five per cent. of carbonic acid, with twenty-five per cent. of atmospheric air and seventy per cent. of carbureted hydrogen, extinguished flame instantaneously. On adding more air to the mixture and applying a match, it would not explode; but when pure oxygen was added, and a match applied, the mixture exploded gently. Further, when this gas was deprived of the carbonic acid by means of caustic soda and a match was applied, it would burn when issuing into the open air.

I have quoted freely from Mr. Thomson's paper, believing it will interest those who peruse our reports, but yet I would caution the reader against a too hasty conclusion to apply this method of extinguishing a fire. It is attended with much uncertainty as to its effect, and requires great care in re-opening the inclosed surroundings, lest fire still exist in close proximity to an explosive mixture of gases. I have no doubt that carbonic acid would prove effective and least dangerous in some cases where the circumstances permit an effective application in comparatively small confined spaces; and it may prove very useful and effective also for preventing explosions in some cases where a fire exists in a mine in which explosive gases are evolved. I have seen one or two fires where I think its application would have been very useful and effective, but I have seen many others where I believe its application would have proven ineffective and useless. Therefore, deliberate thought and consideration should be given to the matter in all its features before arriving at the conclusion of applying this method for extinguishing a fire in a coal mine.

Temporary Head Structures for New Shafts.

Through the kindness of Mr. J. F. Snyder, chief engineer of the Delaware, Lackawanna and Western Railroad Company, and of Mr. W. F. Dodge, chief engineer of the Lehigh and Wilkes-Barre Coal Company, a plan of the structures used at their shafts is presented in this report. These structures are a great improvement on the ones hitherto used while sinking shafts in this region, and their introduction into use will surely save some lives while the perilous work of sinking shafts is effected in the future. The reader will see, by reference to the plans, that guides are provided to prevent the bucket from swinging. The rope passes through a cross-piece fitted to slide on the guides, and travels within about fifteen feet of the bucket to a point at the lowest end of the guides, where it rests, allowing the rope to pass through, and the bucket descends to the bottom. The buntings are put in place, and the guides extended down at intervals of about seventy-five feet.

A door, or cover, is made and arranged so as to close the top of the shaft while the bucket is being emptied, and prevents anything from falling into the shaft. In the Lehigh and Walkes-Barre plan, this cover closes

automatically as soon as the bucket ascends through the door-passage. The Delaware and Lackawanna plan has balance arrangement, so that the headman can easily close it when the bucket passes. Both are very good arrangements, and either one is worthy of adoption.

COLLIERY IMPROVEMENTS DURING 1884.

The Lehigh Valley Coal Company.

In February, 1884, a new shaft was commenced by this company on the tract of land now worked from the Exeter shaft. It is located a short distance west of the Exeter shaft, and will be sunk to mine the seams lying beneath those mined in the Exeter. The size of the new shaft is twelve and a half by forty-eight feet, and it will reach a depth of about six hundred feet before cutting the intended seam. A block of coal was left unmined in the Pittston seam, through which this shaft passes, without making connection with the workings of the Exeter colliery. It was sunk at the close of the year 1884 to a depth of three hundred and fifty-five feet.

In the Prospect mine, a slope was sunk to the basin on north side of shaft to a depth of eight hundred feet, and an engine, worked by compressed air, is located at the top of the shaft to hoist the coal up. The engines which compress the air are located on the surface near the shaft, and the air is conveyed through pipes to the hoisting-engines in the mine.

At the Henry colliery, a new breaker was erected about three hundred feet north-east of the shaft. It was completed ready to connect with the shaft by the beginning of December, 1884, when work was suspended to tear the old structure away, and connect the new one. It was started about one week prior to the close of the year. This was a very important improvement at this colliery. It has decreased the risk of descending the mine, besides increasing the facilities for shipping coal.

The Dorrance colliery breaker was started June, 1884, and they are shipping a small quantity of coal every month since. The second opening to connect the two shafts was completed by the beginning of October; but, owing to faults and dislocations interrupting the gangways, they have not been able to mine much coal. The mine is ventilated by a thirty-five-foot fan, Guibal pattern, which was started April 24, and is ever since producing ventilation far in excess of their present need, although running but very slowly. Mr. Mercer, the general superintendent of this company, evidently is bent on securing the best kind of machinery, as well as insuring the highest known degree of safety for both men and property.

The Lehigh and Wilkes-Barre Coal Company.

On April 1, this company began sinking their new shaft at South Wilkes-Barre, and located it about three hundred feet south-west of the old shaft. Its size is twelve by fifty-two feet, and it is intended to work the Red Ash and over-lying seams. It is expected to reach the Red Ash seam at a depth of about one thousand three hundred feet, and had reached a depth of two hundred and thirty feet at the close of the year 1884. Its sinking

is continued, but another year, at least, will pass before it will reach its destination.

In the Red Ash seam of the Empire mine, a slope was made to hoist the coal from the lowest point in the mine to a point on a level with the bottom of shaft. It is one thousand one hundred and sixty feet in length, on a grade of about twenty-five degrees, and it facilitates the drawing of coal from a wide extent of territory which was hitherto out of their reach.

The old Hartford breaker took fire and burned down about eight o'clock in the evening, January 22, and the old Jersey, or No. 8 breaker, was remodeled to take its place. This, however, is not large enough to pass the coal of more than one opening—the new slope, the other two slopes remaining idle. The tunnel at the bottom of the new slope was extended from the Ross to the Red Ash seam, a distance of 380 feet, from which a large extent of coal can be mined. The slope was also extended to a further depth of 950 feet where it touched the synclinal of the basin and opened a wide field of the Baltimore seam.

In the Stanton mine a slope was driven towards the basin in line with the bottom of the new air-shaft, which opens a new lift of excellent coal. The hoisting-engine is located at the top of the air-shaft on the surface and the rope is passed down the shaft and to the slope over pulley-wheels. It works admirably, and the inconveniece of having steam pipes in the mine, and the detrimental effects of the heat radiating therefrom, is thus successfully avoided.

A tunnel is being driven from the Baltimore to the Hillman seam, the size of which is 16×8 feet on a rising grade of nineteen degrees. By the close of the year, it was driven a distance of 222 feet, and it is expected to cut the Hillman seam at a distance of about 775 feet.

In the No. 11, or Lance colliery, a slope was sunk reaching from the level of the shaft-bottom to a length of 1,350 feet, the average grade of the coal-seam being seven degrees. A new gravity plane was made also in the same mine to lower the coal from the highest point of the workings.

Delaware and Hudson Canal Company.

A new shaft was started by this company in April, 1884, and completed to the Baltimore seam before the end of the year. It is located about a quarter of a mile south-east of the Mill Creek colliery. The depth of the shaft is 132 feet, and its size 10ft.×22ft. 8 in. It was sunk for the purpose of working the coal from a small basin, which cannot be reached from the Mill Creek slope. The coal will be shipped from the Mill Creek breaker. Therefore, it is intended to maintain the present production of the colliery, although some portions of the slope are about being exhausted.

The Baltimore Red Ash shafts reported last year are still in progress of sinking. The depth of No. 1 was 304 feet at the end of the year, and of No. 2, 382 feet. Both these shafts are located in Wilkes-Barre township, and are intended to work the Red Ash seam. For dimensions see table in this report.

At the Pine Ridge colliery a new double fan was erected to ventilate the workings of the Hillman and the Baltimore seams. The old fan was removed and the new one was placed at a distance from the shaft, so as to insure its safety in case the breaker takes fire. A passage is made, underneath the surface of the ground, leading from the shaft to the fan, through which the return air passes. This is arched by mason work, and is of sufficient area to pass a large quantity of air.

The Susquehanna Coal Company.

This company is making preparations to mine a large quantity of coal at the Newport colliery. A brief note was made of it in my previous report. The shaft is now at a depth of four hundred and ninety-five feet, having passed through four seams of workable coal, aggregating a thickness of twenty-six feet. A tunnel is also being driven which has reached a length of nine hundred and forty-two feet, having cut through three seams of coal in the first five hundred and eight feet; at which length it also cuts a fourth seam on the anticlinal axis, the thickness of which is not yet determined. The tunnel is continued across a small basin where more seams of coal are expected to be found.

Prepartions are in progress also to sink a slope to work the upper seams. The open cut and a short tunnel to an eight-foot seam is driven, and the slope will now be sunk in that seam, which promises to produce good coal. The coal from all these openings will be shipped from one breaker, which is now being erected, and bids fair to be the largest structure for the purpose ever erected in the anthracite coal region.

The No. 1 shaft, at Nanticoke, was extended from the Hillman to the Red Ash seam, and they are now driving a second opening, which is to be effected by holing into the workings of the No. 2 shaft.

A new fan was erected to ventilate a part of the workings of Nos. 1 and 2 shafts; the details relative to this may be seen in the table of new fans presented in this report.

The Delaware, Lackawanna and Western Railroad Company.

A new air shaft was sunk at the Avondale colliery of this company with the view of placing a new fan upon it to improve the ventilation. Its size is 12′ × 26″ and its depth to the workings of the Red Ash seam is two hundred and forty-one feet.

The No. 1 Woodward shaft is now at a depth of eight hundred and fifty-one feet, and is still being sunk. The No. 2 was sunk to a depth of one thousand and three feet, where it cut the lowest seam of coal supposed to be in the property. These shafts pass through several excellent seams of coal, and the capacity of these openings, when ready for mining coal, promises to be very large.

The Pettibone shaft is still in progress of sinking and has reached a depth of three hundred feet.

The Kingston Coal Company.

The No. 4 shaft, sunk by this company, reached the Red Ash seam at a depth of six hundred and sixteen feet. This opens a very wide extent of territory and is expected to produce a large supply of coal. The second opening will be effected by opening into the workings of the No. 3 shaft of the same company.

The Franklin Coal Company.

Important improvements are in progress at the Franklin colliery. A new slope is being driven down across the measures to cut the Ross and Red Ash seams, and it has reached a depth of six hundred and ninety-three feet on a grade of thirty-three degrees. Eventually, when the slope cuts the Red Ash, a new breaker will be erected, from which all the coal of this colliery will thereafter be shipped. The ventilation of the old slope mine was considerably improved last year by enlarging the air-ways and by some modifications in the construction of the fan.

W. G. Payne & Company.

The East Boston shafts of this company were extended to lower seams. The main shaft to the Red Ash, a depth of three hundred feet, and the air-shaft to the Ross seam, a depth of two hundred and thirty-four feet. This improvement opens a large area of good coal for this company. The size of the main shaft is 11′×22′, and of the air-shaft 10′×18′.

Haddock & Steel.

A new air-shaft is in progress at the Black Diamond colliery of this company, and it has reached the Cooper seam at a depth of one hundred and fifty-two feet. Its sectional area is 12×12 feet. A tunnel was also driven on a rise of seventeen degress from the Bennett to the Cooper seam, by which a large piece of good coal is intended to be mined from a point some distance below the old Cooper workings.

The Red Ash Coal Company.

The new tunnel reported last year as being driven from the surface to the Red Ash seam by this company is completed. It cuts through the Ross seam at a distance of nine hundred and nineteen feet, where the coal was found to be nine feet thick. The Red Ash was reached at a distance of eleven hundred and ninety-seven feet, and the coal is of excellent quality. This tunnel drains all the workings of this company, and relieves them of the cost of pumping water. The slope was extended to the level of the said tunnel, and opens a new lift, of about five hundred feet in length, in both seams.

Thomas Waddell.

The Raubville shaft was extended from the Bennett to the Ross seams, a depth of two hundred feet. They are now driving a second opening.

Dinnny & Co.

The air-shaft at the Schooley colliery of this company was completed to the Pittston seam, at a depth of three hundred and twelve feet. Its sectional area is one hundred and forty square feet. It was connected to the workings by June 1, 1884, since which time the colliery has been working upon its full capacity. A fan was erected at the main shaft, the diameter of which is eighteen feet, and it produces a ventilation of about seventy-five thousand cubic feet per minute. They have had more than ordinary trouble in opening this colliery, but the work has been successfully accomplished, and the mine is now in a fair condition.

The West End Coal Company.

The East End colliery of this company began to produce coal for the market in the month of March, 1884, and has been in operation since that time. Their openings are all above water-level, having driven a tunnel to the seams. At the West End colliery an air-shaft was sunk to improve the ventilation. Its sectional area is one hundred square feet, and depth eighty feet. At the old tunnel a sixteen-foot fan was erected, which has improved the ventilation very materially.

The Hanover Coal Company.

This company sunk a shaft on their premises during the year 1884. Its size is $11\frac{1}{2} \cdot 20$ feet, and its depth from surface to the Ross seam, which is mined at present, is one hundred and ninety-four feet. This, with other improvements effected at this colliery, has increased its capacity for producing coal and for giving employment to persons in and about the mine. Other improvements are in contemplation, which will be effected during the year 1885.

The Alden Coal Company.

The tunnel at the Alden colliery was extended to the Ross seam, having passed through three workable seams including the Ross. The latter is 6 ft. 2 in. thick, and it was reached at a distance of one thousand seven hundred and sixty-four feet from the entrance of the tunnel. The Bennett vein was cut at a distance of two hundred and sixty-three feet, the Twin vein at three hundred and fifty-eight feet, and the Ross at one thousand seven hundred and sixty-four as stated. The first is 4 ft. 6 in. thick, the second 5 ft. and the third 6 ft. 2 in. The tunnel is driven on the level of the breaker, and the coal is brought out by mules.

The Hillman Vein Coal Company.

A tunnel was driven at the Hillman Vein shaft from the Three-foot seam to the Hillman, cutting the latter at a much lower elevation than it was at the shaft. Its sectional area is $8 \cdot 14$ feet, and its length is four hundred feet. This opens a fair lift of good coal at a point convenient to the shaft. They sunk a slope also to the South basin, from which they are now obtaining a large portion of their production of coal.

The Parrish Coal Company.

This company began to operate the Parrish colliery, and started the breaker in the latter part of December, 1884. The breaker is a model of neatness, and everything in the structure is well arranged for producing its intended work. There are two forty-horse-power engines, one to hoist the coal over the inclined plane up to the breaker, and the other to run the breaker machinery. Both are supplied with steam from two new boilers located close to the structure. They are mining the Baltimore and Ross seams, have four horizontal openings or drifts, one of which is on a level with the bottom of the breaker-plane, and the coal from the others is lowered over gravity planes. It is a new colliery operated by a company organized in 1884.

Destruction of Coal Breakers by Fire.

The old Hartford, or No. 6, breaker of the Lehigh and Wilkes-Barre Coal Company, at Ashley, took fire in some mysterious manner about eight o'clock, P. M., January 22, 1884, and was burned to the ground. It was the oldest structure of this kind in this valley, and was still capable of passing a large quantity of coal.

The Forty-Fort breaker of the Wyoming Valley Coal Company took fire early in the morning of November 27, and was totally destroyed. It is not known how it took fire, and this will very probably remain a mystery. The coal is now taken to the Harry E. breaker and shipped from there.

TABLE No. 3.-Giving details relative to New Fans and Fan Engines erected in the Wilkes-Barre District during the year 1884.

NAMES OF THE COLLIERIES.	Pattern of Fan.	DIMENSIONS.		SIDE INLETS.		Working speed in revolutions per minute.	SECTIONAL AREA.		Cubic feet of air exhausted per minute.	Water gauge on fan side—inches.	Horse-power of fan.	Horizontal or vertical fan.	STEAM CYLIND'S		Gearing.	Steam pressure in lbs.	Horse-power of engine.
		Diameter of fan in feet.	Face of fan in feet.	Number of inlets.	Diameter of inlets in feet.		Upcast in square feet.	Downcast in sq. feet.					Diameter in inches	Length in inches.			
1. Pine Ridge,	Double fan,	18	4½	4	6	80	120	140	82,000	1.5	19.3	Horizontal,	18	36	Belt,	75	80
2. Dorrance,	Guibal,	35	12	1	17½	14	192	240	61,000	0.4	3.78	Horizontal,	24	48	Direct,	60	
3. Schooley,	Guibal,	18	6	2	10	60	98	140	75,000	.	. .	Horizontal,	14	28	Direct,	70	40
4. West End,	Guibal,	16	4½	1	7½	40	40	70	. .		. . .	Vertical,	14	18	Direct,	70	25
5. Black Hill, Nanticoke,	Guibal,	25	8	1	7	60	. .	. . .	195,000	1.75	. . .	Horizontal,	24	36	Direct,	60	
6. *Ross Seam, Nanticoke,	Guibal,	25	8	1	9½	.	. .	. .	. .	. . .	. . .	Horizontal,	24	36	Direct,	60	

*This fan was erected in the year 1883, but was not used till 1884.

TABLE No. 4.—Giving details relative to the Progress of New Shafts in the Wilkes-Barre District, and their Depths December 31, 1884.

NAMES OF THE SHAFTS.	Names of the Operators.	Purposes.	DIMENSIONS. Length in feet	DIMENSIONS. Breadth in feet.	Depth, Dec. 31, 1884—feet	Name of coal seam to be sunk to.	Probable depth in feet.	Number of persons employed	Fatal accidents to employees.	Non-fatal accidents.	Remarks.
1. Newport, ...	Susquehanna Coal Company, .	Hoisting coal, .	33	12½	494	Ross, . .	800	70	None,	None,	Sinking in progress.
2. Woodward, No. 1, ...	Delaware, Lackawanna and Western Company.	Hoisting coal, .	53	12	851	Red Ash, .	1,100	100	None,	1	Sinking in progress.
3. Woodward, No. 2, ...	Delaware, Lackawanna and Western Company.	Hoisting coal & ventilation, .	35	12	1,003	Red Ash, .	1,013	. . .	None,	None,	Completed in 1884.
4. Avondale Air Shaft, . . .	Delaware, Lackawanna and Western Company.	Ventilation,	26	12	241	Red Ash, .	241	. . .	3	None,	Completed in 1884.
5. Baltimore Red Ash Shaft,	Delaware and Hudson Canal Company.	Hoisting coal, .	48	12	204	Red Ash, .	. . . .		None,	None,	Sinking continued.
6. Pettibone, ...	Delaware, Lackawanna and Western Company.	Hoisting coal, .	37	12	300	Red Ash, .	1,060	57	None,	1	Sinking continued.
7. Baltimore Slope Shaft, .	Delaware and Hudson Canal Company.	Hoisting coal, .	33	11	332	Red Ash, .	. . . .	26	1	None,	Sinking continued, but approaching the coal.
8. Mill Creek Shaft, ...	Delaware and Hudson Canal Company.	Hoisting coal, .	29	10	132	Baltimore,	132	. .	None,	None,	Sunk during 1884 & completed.
9. Sturmerville Shaft, . . .	Lehigh Valley Coal Company, .	Hoisting coal, .	48	12½	355	Ross,	600	75	None,	None,	Started February, 1884.
10. South Wilkes-Barre, . . .	Lehigh and Wilkes-Barre Coal Company.	Hoisting coal, .	52	12	230	Red Ash, .	1,300	32	None,	None,	Started April, 1884.
11. Maffit Shaft, ...	Hanover Coal Company, . . .	Hoisting coal, .	20	11½	192	Ross, . .	192	. .	None,	None,	Sunk in 1884; completed to Ross seam.

FATAL ACCIDENTS BY EXPLOSIONS OF FIRE-DAMP.

ACCIDENT No. 61.—Edward Nelson, a laborer, aged twenty-four years, was fatally burned by an explosion of gas in the Black Diamond colliery, Luzerne borough, August 9, and died therefrom, August 16, 1884.

The deceased and his brother, Augustus Nelson, were working together on the night shift, driving a gangway on the east side of the underground slope. During the night of August 9, while entertaining a notion of trying to obtain permission to change their working place, their curiosity led them to examine the working places on the west side, and while passing to the face of one breast, wherein a small quantity of fire-damp had accumulated, their lights ignited it, causing an explosion by which both were severely burned.

This was the only breast in which fire-damp was evolving in the mine, and, although a danger signal was placed across its entrance, they passed in and walked on to the face, where they came in contact with the gas. Every person who has had experience in mines is aware of the danger and risk incurred by walking through the faces of the breasts at midnight with naked lights. It is very rarely that any one will attempt it, and it is never needed.

ACCIDENTS Nos. 89 and 90.—Dominick Uskavage, a miner, aged thirty-five years, was instantly killed, and John Filonosways, a miner aged thirty-two years, was fatally injured by explosions of fire-damp in the No. 10 slope, Sugar Notch, December 11, 1884. Adam Lobnoskey and Stanley Woloskey were both slightly burned at the same time. About one o'clock, midday, the fan engineer, having experienced difficulty in maintaining steam at the usual pressure, came to the conclusion that the fan would soon stop running, and sent a messenger to inform the boss of the fact. Immediately after the message was sent, the engineer, seeing that the water in the boiler was below the lowest guage, became excited, thinking that an explosion of the boiler might occur, and pulled a part of the fire out; this, causing the steam pressure to fall rapidly, soon brought the fan to a stop. The fan stopped running before they had time to call the men out of the mine, and consequently, when the ventilation failed, explosive gases, accumulated at the faces of breasts where the above persons were working. In a few minutes the gas came in contact with their lights, and exploded, with the effect described. There were a number of persons, besides those who were killed and injured, working in that section of the mine, but fortunately they escaped uninjured. The fan is a very important machine in a gaseous mine and requires to be watched with the greatest possible care. Every effort should be applied to keep it running until the men can be called out, and in this case the engineer might have kept it running a little longer if he had kept cool and not pulled the fire out from under the boiler. The only danger of not doing that would have been of burning the boiler.

FATAL ACCIDENTS BY FALLS OF ROOF AND COAL.

Accident No. 2.—John Stoddard, American, laborer, aged twenty-six years, was instantly killed in the Black Diamond colliery, Luzerne borough, January 23, 1884. He and six other persons, all company men, were working together making room for a turn-out at the top of a new gravity-plane, and a thin flake of bony coal, measuring three inches in thickness and eight by eight feet area, fell upon the deceased, killing him instantly. They were aware of the existence of this flake of bone, and had made some efforts to pry it down, but had failed, and had gone to work under it believing that there was no immediate danger.

Accident No. 3.—David R. Evans, Welsh, driver, aged sixteen years, was killed in the No. 1 shaft, Kingston Coal Company, January 23, 1884. He took his mule into the East gangway of inside slope to bring a car out, and, finding the car not quite loaded, he went on to the face to help loading it. Just as he was picking up a lump of coal, a large piece of rock fell from the roof upon him, killing him instantly. Subsequent examination showed that the roof was of a very deceiving nature. The fallen stone was tapering to a thin edge on all sides. It was nine inches thick in the center and five by three feet area. The miner had not suspected danger, and had not sounded the roof since that morning. Drivers have no business, however, in the faces of working places, and the miners ought to prohibit them from going nearer to the faces than is necessary.

Accident No. 5.—William H. Davies, American, laborer, aged nineteen years, was severely injured in the Franklin colliery, February 12, 1884, and died at the hospital February 24. He was laboring for his father in a breast, and, in the absence of his father, went up to the breast and fired a blast. While working the loose coal out, a large lump rolled upon him and fractured his spine. His father had repeatedly cautioned him against going up to the face when he was not present, but the young man was ambitious to become a miner, and went up to practice, believing that no harm would follow it.

Accident No. 7.—Matthew Eisolo, a miner, aged thirty-five years, was fatally injured in the Empire colliery, Wilkes-Barre, February 13, 1884, and died upon arriving at his home. Having fired a blast in the top coal, he was in the act of prying some loose coal down, when a large mass, in falling, struck him with the effect stated. He was generally a very careful miner, but in this case he miscalculated the safety of his position, and was standing too close while working the coal down.

Accident No. 9.—John Crosswaite, a laborer, aged fifty-three years, was killed in the No. 10 slope, Sugar Notch, February 20, 1884, under the following circumstances: The deceased was working with Luke Bray, a miner, who was driving a cross-heading from the gangway to connect with an airway driven across the tunnel from the opposite side. Bray was tamping a hole at the face, and Crosswaite was at the side of the gangway. The latter called on Bray, saying: "The top is working;" and Bray replied

by saying: "Well, get into a safe place;" and in a few seconds it fell and caught Crosswaite under it. It gave sufficient warning by cracking and breaking, but the deceased evidently misunderstood its extent, and went the wrong way. The fallen rock was nine inches thick and 20 10 feet area.

ACCIDENT No. 10.—John Frederick Link, a miner, aged thirty years, was killed in the No. 2, Red Ash colliery, Wilkes-Barre, February 21, 1884. It was an idle day at the mine; but a few miners were at work doing special work or preparing some coal. No one witnessed this accident, but persons who were not far off heard Link firing a blast, and in a short time after they heard a mass of coal falling. They then called on Link, and, receiving no answer, went to look for him, and, after reaching the place and searching, they found him under a large mass of top coal crushed to death. Evidently he, after firing a blast in the bottom coal, went on to see its effect, and the top coal fell at that time, and caught him under it.

ACCIDENT No. 16.—James Rock, a laborer, aged thirty years, was instantly killed in the No. 2 tunnel, Nanticoke, March 7, 1884. Five persons were working together robbing pillars, two miners and three laborers. The three laborers were loading a car, and the two miners were charging a hole at the lowest side of the place. The deceased went under a projecting bench of top coal to pick some coal loose and instantly A. Crawser, a co-laborer, told him that the top coal was cracking, and that he should come away, but he had only just moved when he was struck down with the falling coal, with the result stated.

ACCIDENT No. 20.—Andrew Hortak, a laborer, aged twenty-seven years, was instantly killed in the Midvale colliery, Plains township, March 18, 1884. The accident happened by a fall of coal while working on the night shift, in a section gangway, with a miner called John Stetzinger. The fallen coal measured six by five feet area and about fifteen inches thick. On the upper side, it was cut by a slip running parallel with the rib of the gangway, and by another running at right angles across on the outer side. It was evident, from the appearance of this fallen coal, that the miner had allowed the deceased to work in extreme danger, and that he had not exercised proper precaution prior to the accident. The roof ought to have been examined and made secure.

ACCIDENT No. 21.—Michael Jones, a miner, aged fifty years, was instantly killed in the Nottingham colliery, Plymouth, March 18, 1884. He was working in a breast drawing back top coal—had nearly finished the breast. The place at the point where he was working was about twelve feet wide and from eighteen to twenty feet high. A narrow bridge of top coal was standing up across this place which had not yet been blasted down, and while Jones was busy loading a car, it fell upon him, killing him instantly. After it fell, a slip was revealed cutting one side and giving it a loose end.

ACCIDENT No. 23.—Henry Dobertstein, a miner, aged thirty-five years, was fatally injured in the No. 1 shaft, Nanticoke, March 22, and died in

about two hours after. Upon returning to the face of his breast, immediately after blasting, a thin flake of rock fell and struck him, resulting as already stated. It was a piece from the edge of a five-inch tier of rock, which is usually pulled down. A little care in advancing towards the face would have very probably averted this accident.

Accident No. 25.—John J. Gangloff, a miner, aged twenty-seven years, was instantly killed in the No. 3 colliery, Delaware and Hudson Canal Company, Plymouth, April 2, 1884. He was called from his own work to assist another party, in a place near by, to pry down a piece of rock. There were four of them at it, and while making efforts to force the rock down, another large piece, over their heads, worked loose and fell, killing Gangloff instantly. The others had a very narrow escape. They had not suspected that this rock was loose, and apprehended no danger until one of them noticed it moving and shouted to the others to get away.

Accident No. 31.—Adam ———, a Polish laborer, aged about thirty-five years, was fatally injured in the Clear Spring colliery, West Pittston, April 28, and died on the way from the mine. The deceased was not yet employed to work in this colliery, but he had gone into the mine this day to learn how to load coal with a fellow-countryman. Both were standing together near the right rib of the breast, when a large mass of rock, measuring twenty feet in length and six feet in breadth, suddenly fell. One end of it struck the stranger, and injured him so that he soon died. His second name could not be ascertained, as no one in that locality knew it. In some parts of this mine the roof is very brittle and deceiving, and it was so where this accident occurred. The place was well propped, but for all that a large mass of rock fell between the props.

Accident No. 36.—Dennis O'Brien, a miner, aged forty-three years, was almost instantly killed in the No. 1 slope, Nanticoke, May 15, 1884. He and three other persons were together at work laying a piece of track preparatory to work on re-opening a gangway which had recently caved in. It was about twelve o'clock, midnight, when a piece of rock fell upon O'Brien, causing his death in a few minutes. They did not know it was loose; but had not examined it, or the danger of working under it would have been discovered and the accident averted. O'Brien had contracted the work, and it was conducted under his direction.

Accident No. 41.—Richard M. Phillips, a miner, aged twenty-two years, was instantly killed in the Avondale colliery, Plymouth township, June 1, 1884. This was an idle day at the mines, but the deceased, accompanied by his brother, had gone in to do some special work, and while he (Richard) was about starting to drill a hole in the bottom bench, a piece of rock, resembling a shallow pan in shape, fell from the roof and killed him instantly. The rock was about three feet in diameter and was tapering to a thin edge all around. It fell from a height of eighteen feet, and from a place where no rock was supposed to exist.

Accident No. 42.—John B. Carey, a miner, aged sixty-seven years, was

fatally injured in the No. 4 colliery, Plymouth, June 10, 1884. Through some mishap, while barring down a piece of rock in the face of his breast, it fell on him, injuring him so severely that he died therefrom in about six hours after.

ACCIDENT No. —. Charles Anderson, a laborer, aged twenty-three years, was severely hurt in the Oakwood shaft, Prospect colliery, in Plains township, May 21, and died in a few days after at the hospital. He was working in this mine during a temporary suspension of mining at the Prospect shaft. While in the act of loading a car, at a point where the top coal had been broken through, a piece of coal fell from the edge of the top bench and struck him. They had just started to work there, and did not apprehend any danger from that point. The inspector was not informed of his death until June 10.

ACCIDENT No. 44.—Thomas Thomas, a laboror, aged twenty-three years, was instantly killed in the No. 4 slope, Nanticoke, June 13, 1884. This young man was working with John Mills in a narrow breast, on the night shift. The top was irregular and dangerous, requiring double timber to secure it. The day-shift men neglected to put up timber and worked in great danger all day. The night men went to work again without putting timber up, although there was a space of twenty-five feet between the timber and face. About seven o'clock, P. M., the fire-boss visited them, and seeing a dangerous stone hanging over the laborer, ordered the miner to bar it down. Mills took a drill and made some effort to pull it down and failed; then they went to work and fired two more shots, paying no more attention to the dangerous rock. While the laborer, Thomas, was loading the third car, the rock fell upon him, killing him instantly. It is evident that Mills, the miner, is guilty of gross carelessness in this case. Any practical person, upon seeing the place, would come to this conclusion at once. There is, at all times, more or less trouble to get the workmen to timber their places properly when two shifts are working such places, but in all such cases the bosses ought to force them to secure their places or stop their cars. Even in this case, perhaps, if the fire-boss had stopped these men's cars until the timbers were put up, this young man would still be living.

ACCIDENT No. 51.—Timothy Kelley, a miner, aged forty years, was instantly killed in the Schooley colliery, near Wyoming, July 8, 1884. He was working a breast in which the top coal was very dangerous. He was told this morning to go to work and pull the top coal down. It had a long loose end on one side of the track, under which there were no props, nor was there room to put any. On the other side there were two props, but the overhanging coal proved too much for these props to support, and it fell suddenly during the afternoon and caught Kelley under it, killing him instantly. It measured 15 · 4 feet area, and ten inches in thickness. The deceased intended to leave working in this mine after this day, and that is the reason why he worked on the bottom coal, and did not pull the top coal down, as he was told to do.

Accident No. 63.—Joseph Gutofskey, a Polish laborer, aged twenty-two years, was instantly killed in the No. 3 slope, West Nanticoke, August 16, 1884. He was laboring with James Sauvage, a miner, in a level breast. A little before noon, the miner discovered that the roof was cracking and threatening to fall, and he concluded to go and eat dinner, hoping that it would fall in the meantime. He took his laborer with him. Soon after that, the laborer went to the adjacent breast and told the miner, Thomas Vishnefskey, that the top was dangerous in his, Gutofskey's, place, but that he was going to work there whatever the risk. Vishnefskey advised him to go home and not take any risk, but he replied, saying that he would not go home, and returned to his own place. While Sauvage was listening to the roof cracking, Gutofskey came in and walked under the cracking roof. Sauvage instantly pulled him away, and led him to a safe place and motioned to him to sit there while he, Sauvage, went to get a drill to pry the roof down. While Sauvage was getting the drill, Gutofskey walked under the cracking roof again and began to work, and, upon returning, Sauvage took hold of his collar to pull him away. At this time, a piece of bone fell on Gutofskey and knocked him down, and, immediately after, another fall came on him, killing him instantly. Sauvage could not talk to the deceased because the latter did not understand English, and he found it impracticable to make him realize the danger of going under the cracking roof.

Accident No. 64.—Enoch John, a Polish miner, aged thirty-five years, was fatally injured in the Clear Spring colliery, West Pittston, August 20, 1884. He fired a blast in the bottom coal under a projecting piece of "black rock," and immediately after returned to work the shot out without even looking how the rock stood, and it fell on him, injuring him so that he died while being conveyed home.

Accident No. 66.—Edward McGinty, an Irish miner, aged thirty-six years, was almost instantly killed in the Mineral Spring colliery, Plains township, August 28, 1884. The deceased and Joseph Moore, both miners, were robbing pillars. At the close of their day's work a prop was to be cut away. The deceased took the ax and was in the act of cutting the prop when the projecting bench of coal supported by it gave way and fell on him, with the result stated. The prop was within about four feet of the outer edge of the coal, but the deceased was cutting on the inner side, and therefore had no chance of escape in case the weight of the coal should break the prop as it did. He made a fatal mistake by not cutting on the outer side, or blasting the prop out.

Accident No. 67.—Casper Yokobofskey, a Polish laborer, aged forty-five years, was instantly killed in the Alden colliery, August 30, 1884. He was laboring in a breast with a Polish miner named John Lisko. The roof was broken and dangerous, having a roll across near the face. The breast was about seventy feet long on a rise of eighteen degrees. About ten o'clock, A. M., while deceased was throwing coal into the chute, the roof fell on him.

killing him instantly. He had worked only three days in this mine, and from the appearance of the place it was evident that the miner was hardly fit to have charge of it. The miner could not speak nor understand English, and his account of the cause of the accident could not be obtained so as to be intelligible.

ACCIDENT No. 68.—Michael Connell, an Irish laborer, aged thirty-five years, was instantly killed in the Clear Spring colliery, West Pittston, September 9, 1884. He was working on the night shift with John Rhine, a miner, and another laborer, named Kerwin, starting a gangway from the side of a breast. Upon returning towards the face, after firing two shots, a large piece of "black rock" fell upon Connell and killed him instantly. Kerwin was also slightly injured. The so-called "black rock" was imbedded in the lower side of the top coal in irregular patches, and the existence of this piece was not discovered until it fell and did its fatal work.

ACCIDENT No. 70.—Patrick Gallagher, a laborer, aged thirty-five years, was killed in the Diamond mine, Wilkes-Barre, during the night of October 9, 1884. While loading a car near the face of an airway, a large fall of boney coal came upon him, killing him almost instantly. William Simons, the miner, and David B. Davies, a laborer, were working at the face, and fortunately, but very narrowly, escaped without receiving any injury. It was an unusually large fall, coming suddenly, because it was cut by slips parallel with both ribs. It is evident, though, that more care ought to have been exercised by these men, and also by the persons working on the other shifts, for careful examination might have discovered the danger they were working in before the boney fell.

ACCIDENTS Nos. 71 and 72.—George Hand, a miner, aged thirty-seven years, and Stephen Heywood, a laborer, aged nineteen years, were both instantly killed in the No. 2, Red Ash colliery, Wilkes-Barre township, October 10, 1884. They were drawing top coal down in a breast which had been driven forward on the bottom coal. While engaged under a projecting tier of rock, it fell on them, killing both instantly. This rock ought to have been pulled down before commencing to work under it; but evidently they were trying to load the loose coal away, so that they would have no need of removing the rock after it fell.

ACCIDENT No. 75.—Michael Okinga, a miner, aged thirty years, while working at the face of his breast in the No. 3 shaft, Kingston, on October 13, a fall of slate and boney came upon him, causing a compound fracture of his leg. He was promptly conveyed home; but no effort was made to prevent loss of blood, and he died within a few hours from that cause.

ACCIDENT No. 76.—John Castle, a miner, was injured in the Baltimore slope mine, Wilkes-Barre township, October 21, 1884. While loading a small buggy-car, and standing near the rib, a piece of coal separating from the rib fell on him, causing a compound fracture of his leg. He was conveyed home, and allowed to lie there without proper medical attention for several hours. When taken to the hospital that evening, the loss of blood

was such as to deprive him of strength to survive the shock, and he died in two days thereafter.

Accident No. 77.—Andrew Johnson, a miner, aged forty-two years, was instantly killed in the Maffit colliery, Hanover township, October 23, 1884. He had fired a blast in a cross-heading, and, after waiting about twenty minutes, was returning to the entrance of the cross-heading when a piece of boney coal, fifteen feet long, five feet wide, and ten inches thick, fell on him, killing him instantly. Subsequent examination showed a slip through the boney at the upper side of the cross-heading, which evidently was the cause of its falling so suddenly. This slip was in sight before the boney fell, and the deceased ought to have approached with more attention and care.

Accident No. 79.—Richard P. Thomas, a miner, aged thirty-five years, was instantly killed in the Nottingham colliery, Plymouth, November 7, 1884. He had fired a shot in the top coal which had shattered it, but had left it hanging. At the request of the deceased, Thomas P. Jones went with him to consult as to the best point to drill a hole for the purpose of bringing the shattered coal down. Upon approaching the face, Jones, seeing the hanging coal, stopped and said that he did not like its appearance. Thomas replied, saying, "Come on," and started across under the edge of the top coal, when, simultaneously, the shattered portion fell on him, injuring him so severely that he died within a few minutes. Jones moved him immediately to a safer position, but all he said was, "It's all over on me, Tom," and expired. He might have reached the point he wanted without taking any risk, but evidently he trusted that the coal would hang until another blast was fired.

Accident No. 80.—Benjamin Rodda, a miner, aged thirty-six years, was instantly killed in the No. 4 slope, Nanticoke, November 10, 1884, in the following manner: He was about commencing to drill a hole under a tier of bone and rock hanging across the corner of the breast, ostensibly for the purpose of blasting it down. His sense of hearing was very defective, and, while thus unsuspiciously engaged, the hanging bone and rock fell and killed him. Evidently, the bone gave sufficient warning by cracking, but the deceased could not hear it.

Accident No. 85.—Patrick Dailey, a laborer, aged twenty-five years, was instantly killed in the Prospect colliery, November 24, 1884. Peter Ward, a miner, was slightly injured at the same time. They were driving a cross-cut through the right pillar, and, from the appearance of the place after the accident, two props were knocked down by a blast, and, returning to work without replacing them, were caught by a fall of roof. This accident was evidently the result of pure recklessness, and the miner was mainly to blame for its occurrence.

Accident No. 86.—William Woods, a miner, aged thirty-five years, was severely injured in the Harry E. mine, November 25, 1884, and died thereof in twelve hours after. He fired a blast in the bottom bench, and immediately

returned to work the loose coal out. While thus engaged, a piece of rock fell from the roof upon him, resulting as stated.

ACCIDENT No. 92.—James Mason, a laborer, aged thirty-five years, killed in the Schooley colliery, near Wyoming, December 15, 1884. He was working with Bernard Molloy, a miner, who was at the face of the breast while Mason was in the cross-cut which had just been holed through to the adjacent place. The deceased was picking at a slip in the roof, when Molloy called on him to listen, thinking that he heard something cracking, and almost instantly a thin slab of "black rock" fell on Mason, killing him instantly. The so-called "black rock" is imbedded in irregular and often unsuspected patches under the rider coal, and this piece was of such form and character that no one had suspected its presence. It is regarded by the miners as a very dangerous rock, and has been the cause of a large number of accidents in the various mines where it exists.

ACCIDENT No. 94.—Jacob Shafer, a miner, aged forty-four years, was instantly killed in the No. 4 shaft, Plymouth, December 16, 1884. The seam where he was working is mined in two parts, the bottom bench mined first. He fired a blast in this bench, and immediately returned to work the coal out without examining its effects on the top coal. While thus engaged, a piece came loose from the edge of the top coal—close above his head—and struck him, killing him instantly. If he had exercised ordinary care, he would have discovered the loose coal and pulled it down before doing anything else.

ACCIDENT No. 95.—James Jones, a miner, aged twenty years, was instantly killed in the Mineral Spring colliery, Plains township, December 19, 1884, in the following manner: James Moore, a driver boy, had fired a blast in the pillar at the entrance corner of an abandoned breast, close to the gangway, for the purpose of obtaining coal to load out in some friendly miner's account, and thus obtain a little extra money. He, Moore, was working the loose coal down when James Jones happened to come by, and, seeing the boy's efforts, took the drill from him and began to work the coal out in his place. Right over the point he was standing on, a bench of rider coal was projecting, which, upon taking away its support, fell on Jones and killed him instantly. Young Moore was violating the rule of the mine by doing this work unknown to the officials. He did it clandestinely, and had taken powder from the miners' boxes to fire the blast at night. It was found that he had been in the habit of gathering loose coal and sending it out on some friendly miner's account for some time prior to this, but had not been detected until now.

ACCIDENT No. 96.—Anthony Carling, a miner, aged forty years, killed in the No. 10 slope colliery, Sugar Notch, December 19, 1884. He fired a blast in a cross-cut and promptly returned to work in the dense smoke without even examining the roof, and a tier of bone fell on him, killing him instantly. Subsequent examination showed a slip along the upper rib which, evidently, caused it to fall so suddenly.

Fatal Accidents by Falling Down Shafts.

Accidents Nos. 27 and 28.—Jerry Lenahan and Joseph Prudhoe, the former a sinker, aged twenty years, the latter a master mechanic, aged twenty-nine years, the first was killed and the second fatally injured in the Avondale air shaft, April 7, 1884. This was a singular accident, occurring in a very unfortunate manner. The machinists were about to put a heavy pump down the shaft, by fastening the hoisting rope to it and lowering it with the engine. It was to be located on a platform already prepared, within about ten feet of the bottom of the shaft. Three sinkers, viz: Humphrey Harris, Jerry Lenahan, and another person, whose name is not recorded, were present to assist the machinists. When ready to lash the pump, Mr. Prudhoe told the three sinkers to descend the shaft, and wait on the platform until the pump would be lowered, so that they could pull it on and loosen the rope. Lenahan and one of the other sinkers were afraid to go down before the pump, fearing the rope might break, letting the pump fall upon them, but they did not tell the machinists of this. While the latter were busy about the pump, Humphrey Harris descended the shaft in the bucket, leaving the other two on the upper landing, determined to slide down the rope after the pump would be lowered. The machinists, not knowing this, and believing that the three sinkers had descended the shaft, lashed the pump, swung it into the shaft, and had it lowered carefully, until Harris signaled to stop. He not being able to pull it to the platform, shouted for help, and Lenahan instantly took hold of the wire rope and began to slide down. Prudhoe saw him passing the lowest landing, and watched him until he had descended about seventy-five feet, where he lost his hold and fell to the bottom, and was instantly killed. Prudhoe now ran into the engine-house, put on a pair of gloves, and attempted to go down in the same manner. After descending about one hundred feet, the rope being so tight and stiff, he also lost his grip and fell, landing upon the pump terribly injured. Harris got on and held him, while they and the pump were hoisted up. His leg was so tangled among the rods that the latter had to be cut to get him loose. While this was being done, he suffered terribly, and did so bravely. But although he had a strong constitution, the shock was too severe, and he died the following day. Shaft sinkers very frequently descend by sliding on the ropes, and these men had done it many times before, when only an empty bucket was suspended to it. A heavy weight suspended to the rope caused it to stand rigidly in the shaft, and it would have been as easy to descend by sliding down an iron rod as to descend on this rope when such weight was suspended by it. It was a sad accident, and a valuable lesson ought to be learned by all persons who may be inclined to take such risks.

Accident No. 32.—Charles Duffy, a mason, aged forty-five years, was instantly killed in the No. 1 shaft of the Delaware and Hudson Canal Company, at Plymouth, April 29, 1884. He and two assistants were engaged building a wall in the Lance vein, which is midway down the shaft. This

shaft is only used for pumping, ventilation, and escape in cases of emergency. At noon Duffy and his companions were hoisted up to the top of the shaft to get their dinner, and were lowered again after dinner. John Wright, the fireman, descended on the same cage; he was going down to the bottom to oil the pump. Duffy and Pittman, out of curiosity, went down to the bottom with Wright to see the pump. When being hoisted up, they knocked on the steam-pipe signaling to stop at the Lance vein; but the engineer not hearing it continued to hoist. The cage moving but slowly while passing the opening to the Lance vein, both Pittman and Duffy jumped off; the latter struck his head against the top and fell back into the shaft, and was instantly killed. There was a rapper signal at the bottom, but they made no use of this. The engineer was under the impression that the men had got off the cage at the Lance vein when descending, and did not expect that it was necessary to stop while hoisting up, as he believed that no one besides Wright was on. The reader can perceive how easily they could have averted this accident. If the engineer had been informed of their intentions, he would undoubtedly have stopped the engine, and they would have got off safely.

ACCIDENT No. 45.—Frank Barton, a laborer, aged twenty-nine years, was killed in the Dodson shaft, Plymouth, June 13, 1884. He was going to work on the night shift. While he was descending the shaft on one cage a cage full of men was ascending on the other. The ascending cage was stopped at the landing on top of the shaft for the men to get off. The cage upon which Barton was standing was within about seventy-five feet of the bottom of the shaft when he stepped off, and fell to the bottom and was killed. The mine boss was at the top when Barton got on the cage, and he told Barton that it would stop in the shaft while the ascending men got off, and he cautioned him to stop on the cage until it would reach the bottom. He evidently either misunderstood the boss or forgot himself, and, having no light, stepped off, believing that he was on the bottom of the shaft.

ACCIDENT No. 47.—Louis Hova, a miner, aged twenty-four years, was instantly killed in the Exeter shaft, West Pittston, June 16, 1884. He and three other persons were on the cage ascending the shaft. Hova had two long drills, and carelessly left them lean over the cage; one caught in a bunton, and struck him off into the shaft, and he was instantly killed.

ACCIDENT No. 53.—William Bishop, a sinker, aged twenty-one years, was killed in the No. 1 shaft extension, Nanticoke, July 14, 1884. A part of this shaft was recently sunk or extended from the Forge to the Red Ash seam, and the deceased, with seven other workmen, was working on a platform about ninety feet from the bottom of the shaft. They were putting buntons in. A part of the platform had been raised to a higher bunton on one end of the shaft. A piece of timber was being lowered, and Bishop, by going to receive it, stepped over the edge of the platform and fell to the bottom. Evidently he had his mind set on the timber, and forgot that the platform was raised on that part into which he stepped.

Accident No. 84.—Thomas Barrett, a door-boy, aged fourteen years, was knocked off the cage near the top of the Henry shaft, Plains township, and fell to the bottom and was instantly killed, November 24, 1884. Young Barrett and three other persons were standing on the cage ready to descend the shaft. John Novitzkey was standing at the top of the shaft, and a keg full of powder by him. Henry Geddis, the headman, gave signal to lower the cage, and upon seeing the cage starting, Novitzkey, grabbing the powder keg, sprang on, and landing against Barrett, struck him off, down the shaft, a depth of three hundred and ninety feet, where he was instantly killed. Evidently Novitzkey sprang on impulsively upon seeing the cage going, and he might have been killed the same as Barrett if those on the cage had not saved him by holding him.

Accident No. 87.—William McCabe, a headman, aged twenty-six years, fell down the Baltimore Red Ash shaft, Wilkes-Barre township, and was instantly killed, on Sunday evening, December 7, 1884. He was at the top of the shaft attending the bucket while hoisting the water ready for the eleven o'clock shift. About five o'clock, P. M., Larry Owens, a sinker, was standing by talking to him. While the bucket was descending, he thoughtlessly took hold of the descending rope, and was instantly pulled over his balance and fell to the bottom of the shaft, then at a depth of three hundred and eighteen feet. He was familiar with the work, and, like most sinkers, was evidently too careless while working in such a dangerous position as he was when the accident occurred.

FATAL ACCIDENTS BY MINE AND RAILROAD CARS.

Accident No. 6.—Alexander Stevens, a plane-footman, aged eighteen years, was almost instantly killed at the Mill Creek colliery, February 13, 1884. While trying to uncouple moving cars at the bottom of the breaker-plane, his head was jammed between them and he died in a few seconds.

Accident No. 11.—Thomas John Jones, a driver, aged thirteen years, was severely injured in the No. 2 shaft, Nanticoke, February 22, 1884, and died the same day. While running a loaded car down a short run by brake, the lever of which was on the front end, his leg was shockingly crushed by being caught between this car and another which was standing in the way. The door-boy, who was close by, called on him to get off, but he failed. He was carried home and died that evening.

Accident No. 14.—Sylvester Ross Brown, a driver, aged seventeen years, was killed in the Wanamie colliery, February 25, 1884. While driving a mule, branching an empty car, he was walking by the mule's side. A loaded car was standing on another track, and the empty one jumped off and jammed him against the loaded one. He was injured so that he died in a few seconds. He was the only son of a widow in very destitute circumstances.

Accident No. 15.—Charles King, a driver, aged twenty-two years, was killed in a mysterious manner on the way between the West End breaker

and the mine, in Coalmont, March 1, 1884. He was found lying on the road dead, and the supposition was that he fell off the mule's back and broke his neck. No evidence as to the manner it occurred could be obtained.

ACCIDENT No. 17.—Peter Friel, a miner, aged forty-five years, was killed in the No. 2 shaft, Nanticoke, March 7, 1884. The deceased, on his way out from the mine, had just arrived at the foot of the No. 1 lift in the inside slope, when Agnew, the footman, interrupted him, saying that he should not walk up the slope. Friel was standing between the main-slope road and the lift road, when a runaway car came down and crushed him against the pillar, killing him instantly. The head-man was trying to run this car into the loaded track at the head of the slope, and it got off the track, running on the planking on to the slope road, over which it ran down with fearful velocity to the point stated, where it ran upon the deceased.

ACCIDENT No. 22.—Thomas McGovern, a driver, aged seventeen years, had his skull fractured in the Henry colliery, Plains township, March 25, 1884. While hauling a loaded car out on the gangway, he was sitting on the bumper on the front end of the car. William Powell, the runner, was riding on the rear end. At a point where the gangway was wide, the road clean and level, he was seen falling over towards the rib, and, upon examination, his skull was found to be fractured. I failed to ascertain the manner he got the injury, as there appeared to be ample room between the car and everything except the roof, which is generally low in this mine. However, he was riding in a dangerous manner, and the car may have struck him and caused the injury.

ACCIDENT No. 26.—William Hunt, a track-layer, aged forty-three years, was fatally injured in the Reynolds slope, Plymouth, April 3, 1884. Between eight and nine o'clock A. M., the deceased happened to be on the slope—no one could explain for what purpose, and the empty trip-getting off the track, ran directly to the point where he evidently had tried to escape, and caught him against the lowest corner of a cross-heading. He told the footman who came to his relief that he tried to get out of the way and failed. He died in about two hours after conveying him home.

ACCIDENT No. 29.—Edward Keifer, a driver, aged seventeen years, was fatally injured by railroad cars near the No. 3 breaker, Grand Tunnel colliery, West Nanticoke, April 17, 1884, and he died on April 19. The deceased was running four loaded railroad cars out from under the breaker to a point about one thousand feet west of it, where they were to remain until the locomotive should take them away. By trying to couple these to the cars standing there before, the wheel ran over his leg and crushed it in a shocking manner. He never recovered from the shock, and he died at the time stated.

ACCIDENT No. 30.—William D. Evans, a driver, aged nineteen years, had his leg crushed under cars in the Reynolds colliery, Plymouth, April 28, 1884, and he died at the Wilkes-Barre hospital, April 30. While riding on

the front end of cars, being hauled out on the gangway, the first car jumped off the track. His leg was caught under the bumper and severely crushed, resulting as above stated.

Accident No. 33.—Daniel Price, a laborer, aged seventy years, was instantly killed in the East Boston colliery, April 30, 1884. The deceased was an old employé at this mine, and had been sick for a few days, having gone to work again this day, but he was very weak, and evidently not fit to be at work. He was working company work, cleaning roads, &c. Early this morning he was seen wandering around as if he did not know where he was or what he should do. He told a person that he was lost and could not find his way, and this person led him to a point which the old man was familiar with and was safe. About ten o'clock, A. M., he wandered around again, and finally went on the underground slope, where a trip of empty cars coming down, ran upon him and killed him. He evidently was not fit to be at work, but the authorities were not aware of that, or very probably he would have been sent home.

Accident No. 35.—John E. Watkins, a tracklayer, aged forty-five years, was instantly killed on the No. 4 slope, Nanticoke, May 14, 1884. The deceased and Evan J. Evans, his assistant, were at work repairing planking on the branch of the No. 1 lift on the above slope, when a trip of four empty cars was being lowered. The second and third cars of this trip got off the track above the point where the men were working, and caused the first to detach itself and run down. Watkins and his helper heard it coming, and both tried to escape; but Watkins happened to run to the point to which the car also ran, and caught him, killing him instantly. He was familiar with the slope, but he was under the impression that the car was attached to the rope until it was too late for him to escape.

Accident No. 37.—William Wilson, a mason, aged twenty-four years, was instantly killed in the Baltimore tunnel colliery, Wilkes-Barre, May 16, 1884. He and two or three others were on their way out after quitting work, and upon arriving at the inner end of the inside tunnel, where the roads separate, one to the east and the other to the west, they met Thomas Hero, a driver, with a team of four mules, bringing in a trip of four empty cars. It being the last trip for this day, the driver, evidently in haste to quit, was driving very fast and recklessly. Wilson, seeing the mules coming to the road upon which he was standing, jumped to one side into the space between the two roads. By some mishap, the cars took the wrong track, and the mules, going the other, pulled the leading cars off and across directly upon Wilson, and crushed him to death against the pillar. The driver had been repeatedly cautioned against driving fast at this point; but, nevertheless, it appeared from the testimony of those who were witnesses of the accident that he was driving very recklessly at this time.

Accident No. 38.—Henry Remalee, a driver, aged twenty years, while riding on the cars out from the mouth of the Sand drift at the West End

colliery, Coalmont, May 16, 1884, fell before them, and one wheel passing over his thigh crushed it severely. Amputation was performed that afternoon with hopes of saving his life, but the shock was such that it caused his death during the operation. The accident occurred outside on a level, clean road. Doubtless, he was riding in a careless manner, and unexpectedly fell.

ACCIDENT No. 43.—John Quinn, employed chiefly in leveling the coal on top of the railroad cars, aged sixteen years, was severely injured at the Wyoming colliery, Plains township, June 10, 1884. The locomotive was at the breaker for the purpose of taking a train of cars away. Young Quinn, seemingly not aware of its presence, was in the act of coupling two cars just when the locomotive was backing them up, and his arm was caught and literally crushed from the shoulder down between the jammers. His arm was amputated, but he died immediately after the operation.

ACCIDENT No. 48.—William Thomas, a door-boy and helper of a driver, aged thirteen years, was instantly killed in the Nottingham colliery, June 24, 1884. The deceased was leading the mule hauling a car to the passing-branch, while the driver, Eckley Morgan, was spragging the car. At the point where the mule turned out from the track, Thomas fell in some unexplained manner, and the car ran upon him, and killed him instantly. It was done so quickly that the driver did not see what caused him to fall.

ACCIDENT No. 52.—Sylvester Losnefskey, a door-boy, aged sixteen years, was killed in the No. 1 slope, Nanticoke, July 8, 1884. He was working at night attending a door, while the runner had gone up the section-road to run a loaded car down. The deceased fell asleep on the track. The runner, upon returning with the car, and when approaching the door, saw it was not opened, and saw light through the crevice under the door. He tried to stop the car, but failed because the grade was too steep, and it ran against the door, breaking it down upon the door-boy, killing him instantly.

ACCIDENT No. 55.—Michael Mando, a Hungarian loader, aged twenty-six years, was fatally hurt at the No. 1 breaker, Kingston Coal Company, July 31, 1884, and died in three hours after at his home. While the railroad locomotive was pushing a train of empty cars under the breaker, Mando, who was standing on the end of one of the breaker-sills, close to the chute-posts, attempted to board a gondola car, and was instantly caught and crushed between the car and chute-post. He was generally a careful man, but this attempt was a very reckless move, having but a very slight chance of escape from being caught as he was caught.

ACCIDENT No. 57.—William Spargo, a miner, aged thirty-five years, was fatally injured in the No. 11 or Lance colliery, Plymouth, July 31, 1884, and died the same day. While at work on the night shift at the face of a new gangway, just starting from the side of the underground slope, two empty cars were left down the slope, which ran upon him, resulting as stated. The engine was located at the surface, and the engineer was not

aware that the cars were to be turned into this branch; therefore, he left them down while under the impression that they were to go to a lower lift, and, running rather fast, they knocked down a prop placed to hold them at the end of the track in Spargo's place. Spargo trusting that the said prop would hold the cars, did not go out of the way, and was caught between them and the face.

Accident No. 59.—Andrew Madiefskie, a laborer, was fatally injured at Nanticoke, August 6, 1884. He was conveyed to the Wilkes-Barre hospital, and died there the following day. Madiefskie was an employé of the No. 1 shaft. When on his way home from work, he took a ride on the coal train running from shaft No. 1 to the No. 2 breaker, and upon approaching a point near the road leading to Honeypot, he jumped off, fell back under the cars, and was injured, resulting as above stated.

Accident No. 62.—Anthony Gallagher, a door-boy, aged fourteen years, was instantly killed in the Prospect colliery, August 15, 1884. The deceased, leaving his post, followed the driver to the face of the gangway, and held the mule's head while the driver attached the stretcher-hook to the car. Then he stepped to the lower side and stood a few feet inside of the brattice-end, until the car was started out. After moving a few feet, the car suddenly stopped, and the boy was found to have been caught between the car and the brattice prop, where he was instrantly killed. It was contrary to the rules of the mine for the door-boy to go from his door, but the boys are ambitious to become drivers, and frequently violate the rule by following the drivers, and such was the case in this instance.

Accident No. 65.—James Delucken, a laborer, aged forty-two years, was fatally injured in the Exeter mine, West Pittston, August 23, 1884. His family were in Italy, and having received a letter from them, the deceased, not able to read it, brought it to the mine and went from his working-place to the working-place of a friend to have it read. While on the gangway returning, and his mind evidently deeply absorbed in the contents of the letter, a car was running from a breast to meet him, which ran upon him and injured him so severely that his death ensued the same day. He said that he did not notice the car coming, and therefore made no attempt to get away, although there was enough room along the track side.

Accident No. 69.—Andrew Cree, a mine-carpenter, aged twenty-four years, was killed in the No. 1 shaft, Kingston, October 8, 1884. He had charge of the pulleys on the inside planes, and he went up the No. 1 plane, unknown to the footman, and was killed by the first trip of cars let down, which was shortly after he went there. He was familiar with the place, yet he made a fatal mistake by going there without informing the footman, as there was no room to turn out of the way of the cars.

Accident No. 78.—Henry Bray, a laborer, aged thirty-six years, was fatally injured in the Hollenback mine, Wilkes-Barre, October 28, 1884, and died at the top of the shaft when being conveyed home. While he and Thomas Gallagher were trying to get a car on to the head of the No.

3 plane, he was caught between the car and rib and severely squeezed. The result was that he died, as above stated.

ACCIDENT No. 81.—James Hoban, a footman, aged twenty years, had his head jammed between two empty cars, while coupling them, at the foot of the Midvale slope, Plains township, November 13, 1884, and was instantly killed.

ACCIDENT No. 83.—Edward Smith, a slate-picker, aged twenty-three years, after assisting to load one of the railroad box-cars, at the Maffit breaker, on November 22, 1884, attempted to pass out through a narrow space between the slowly moving car and a horizontal foot-plank, and was squeezed so severely that he died November 24, 1884. This breaker is located at Sugar Notch, and is operated by the Hanover Coal Company.

FATAL ACCIDENTS BY EXPLOSIONS OF POWDER AND BLASTS.

ACCIDENT No. 12.—James Davy, a miner, aged twenty-eight years, was fatally injured in the No. 1 shaft, Nanticoke, February 23, 1884, and died thereof the following day. About four o'clock, afternoon, Davy, having a blast ready to fire, told his laborer to warn the men working in the next breast, and immediately after that, he shouted the usual alarm "fire," and the blast almost simultaneously exploded. The laborer and others went to look for him, and found him lying on the floor with his skull severely fractured. He was using the Daddow & Beadle touch-squib, but we failed to ascertain the cause of its firing so quickly.

ACCIDENT No. 13.—David Davies, a miner, aged forty-five years, was fatally injured in the No. 2 slope, Nanticoke, February 23, and died February 25, 1884. While waiting for a blast to explode, at a point thirty-five yards distant from the face of his breast, a small lump of coal was thrown back, which struck him on his head, fracturing his skull so severely that his death was caused at the time stated. He was standing close to the rib where he thought he was safe, but a stray piece of coal struck him and did its fatal work. If he had gone a few feet farther and into the cross-heading, he would have been in a safe position.

ACCIDENT No. 46.—John Phillips, a miner, aged forty-six years, was severely injured in the No. 4 shaft, Plymouth, June 16, 1884, and died thereof on the following day.

The deceased and his brother Frederick were working in a breast together. They had prepared two holes to blast, one in the top and the other in the bottom coal. The matches of both were fired at the same time, but the top-coal one "missed" to explode; John returned to relight it, and placed his hat, with lamp attached, on the needle, and reaching up fired the squib instead of the match. He thus instantly exploded the blast, which threw the coal down upon him, causing the injury described. Comments are unnecessary on accidents like this, as every practical miner can readily see where the mistake was made. Phillips should have taken more time and been sure where to place the fire.

Accident No. 49.—Robert Schultz, a miner, aged thirty-three years, had his skull fractured by a blast in the No. 1, Red Ash colliery, July 2, 1884, and he died a few days later at the hospital in Wilkes-Barre. Schultz who was working a breast on a pitch of about twenty degrees, had prepared a blast ready to fire. There was no other person in the breast with him. The driver was on the gangway a few feet inside of his breast, and the blast fired without any warning from Schultz, and he was found immediately after lying on the gangway with his skull severely fractured and unconscious. He was using Beadle & Daddow's patent touch-squibs, and it was supposed that he either cut the match too short, or that the squib was defective, causing the blast to fire before he had time to get away.

Accident No. 50.—William Levitzkey, a laborer, aged twenty-eight years, was fatally injured in the No. 3, West Nanticoke colliery, July 8, 1884, and died in two hours after. The deceased was throwing coal into the chute in his breast, when Thomas J. Parry fired a blast in the adjacent breast. A piece of coal was thrown across through the cross-cut, which struck him on his head, fracturing his skull, and causing his death as stated. The face of Parry's breast was twenty-eight feet forward from the cross-cut. Parry ran into Levitzkey's breast after firing the match, and seeing the latter standing opposite the cross-cut, requested him to come away, but he refused to move, and when the shot fired a small piece of coal, striking the lowest corner of the cross-cut, glanced across and struck Levitzkey as already stated.

Accident No. 56.—Thomas Kearns, a miner, aged thirty six years, was instantly killed in the No. 5 colliery, Plymouth, July 31, 1884. Kearns was driving an airway and was about to fire a blast. He fired the match and ran to a safe place to wait for the blast to fire. It took a longer time than usual, and he came to the conclusion that the squib had "missed fire;" then he walked back for the purpose of applying another, and just when he was within about ten feet of the face, the blast fired and killed him.

Accident No. 60.—Joseph Shiner, a Hungarian miner, was injured in the Forty Fort colliery August 9, 1884, and died at the hospital August 11, 1884. While firing a blast in the face of a level breast, he ran back to the gangway, a distance of one hundred and five feet, and stood directly in line with the breast, watching it. Upon exploding, the blast threw a lump of coal, which struck Shiner on his forehead, breaking the skull, and causing his death as stated. He had been cautioned against standing and exposing himself thus when blasts were being fired, but he persisted in this dangerous habit until this accident occurred.

Accident No. 73.—George E. Williams, a miner, aged thirty years, while in the act of igniting the match to fire a blast it exploded, injuring him so severely that he died in four hours after. The accident occurred at about eleven o'clock, A. M., October 11, 1884, in the No. 4 Slope mine, Nanticoke.

Accident No. 82.—John Pomrinkey, a miner, aged forty-four years, was seriously injured by a blast in the No. 2 Slope, Nanticoke, November 22,

1884, and died therefrom at the Wilkes-Barre hospital November 28. While in the act of applying fire to the match the blast exploded, throwing the coal upon him, and fracturing his skull. He remained unconscious until he died.

ACCIDENT No. 88.—Thomas McDonald, a miner, aged thirty-seven years, was severely injured in the Mineral Spring colliery December 9, 1884, and died at the Wilkes-Barre Hospital December 13. He was working a breast, and while in the act of applying fire to the sulphur-matched squib the blast exploded, resulting as already stated. It was supposed that the gas emitted from the needle-hole ignited and fired the squib; but there is no proof of this.

ACCIDENT No. 93.—Edward McLaughlin, a miner, aged twenty-five years, was instantly killed in the Baltimore slope mine, Wilkes-Barre township, December 16, 1884. He was working as second miner with James Davy in a gangway. He was firing a shot, and both retired to the air-way waiting the blast. Thinking it had missed, he returned to try another squib, and when he was within a few feet of the face the blast exploded, bursting the coal upon him, and killing him instantly.

FATAL ACCIDENTS FROM MISCELLANEOUS CAUSES IN AND ABOUT THE MINES.

ACCIDENT No. 1.—John Boloskey, a Hungarian laborer, aged thirty-five years, was instantly killed at the No. 2 slope, Nanticoke, January 15, 1884. The deceased was straightening the timber pile in the yard, when a farmer having a sled full of timber drove near one of the guy-ropes which held the iron stack in position at the steam-boilers. The rear end of the sled struck the guy-rope, and the jar broke the opposite one, causing the stack to fall right on the spot where Boloskey was at work, and it killed him instantly.

ACCIDENT No. 4.—Michael Mishko, a Hungarian laborer, aged eighteen years, was smothered in the coal-chute at the No. 5 breaker of the Susquehanna Coal Company, at Nanticoke, February 6, 1884. He and two other persons were sent to throw coal back in the No. 7 chute, which was getting too full of coal. After a while they sat down to rest, during which time the loaders began to draw coal from the chute below, and the deceased, not taking hold of the rope placed there for that purpose, was drawn down into the coal and was smothered, though strenuous efforts were made to save him.

ACCIDENT No. 8.—William H. Thomas, a mine superintendent, aged fifty-one years, was smothered under a mass of culm at the Franklin colliery, Wilkes-Barre, February 16, 1884. The culm dump was discovered to be on fire, and Mr. Thomas sent a force of men to remove a part of its side in order to find the seat of the fire and extinguish it. About five o'clock, P. M., on this day, he visited the place, and while standing at the base of a high vertical wall of culm giving directions regarding the work, the culm showed signs of falling, the workmen ran, and at the same time called on him, but he, taking the matter rather cool, did not move at once, and was

struck down and covered by the fallen heap of culm. It took fifteen minutes of hard work to uncover him, and by this time he was dead. Mr. Thomas was an excellent man, kind to his workmen, and charitable to the poor and needy. His friends were legions, and all regretted and mourned his untimely end. His employers and workmen felt that they had lost a true and honest friend in his death, and sympathized deeply with the widow and child in their bereavement.

Accident No. 18.—Edward Bellows, a pump runner, aged twenty years, was instantly killed in the Avondale air-shaft, March 12, 1884. He was standing on a platform near the pump, about twenty-five feet from the bottom of the shaft, when a mass of rock from the mountain side rushed into the shaft, crushing the timber and everything down to the bottom. In some providential manner the five sinkers at the bottom escaped without serious injury, but Bellows was instantly killed. The Avondale air-shaft is located at the side of the public road, at the base of the mountain, about eight hundred feet east of the main shaft. A high rocky cliff stands on the north side close to the shaft, and under the disintegrating effects of the thawing frost, a part of this cliff gave way and fell into the shaft, sweeping the platforms, buntons, pump, and everything down to the bottom, where five men besides the deceased were at work. It is almost incredible that such a thing occurred without injuring the said men, but it is true, and those men regard themselves singularly fortunate.

Accident No. 19.—Lewis Lewis, a driver-boss, aged fifty years, was fatally injured in the Wyoming colliery, March 13, 1884, and he died on the 22d of the same month. He and the headman were pushing two empty cars over the head to run down the slope, and when they got on the grade Lewis stepped on the rear end of the last car to ride down. It happened that there were about fifty feet of slack rope, and the cars ran rapidly until the rope got tight, when they suddenly stopped; Lewis was thrown violently against the car, breaking three of his ribs and causing internal injuries, from which he died, as already stated. The hoisting-engine was at the surface, and the rope passed down the shaft over pulleys. When three cars were put to the rope, as is usually done, the slack rope was easily taken out, but on this occasion the two cars were too light, hence the men were deceived as to the length of slack rope.

Accident No. 24.—John Garra, a slate-picker, aged ten years, was instantly killed in the Hillman Vein breaker, Wilkes-Barre, March 24, 1884, under the following circumstances: He was employed in picking slate in one of the chutes, which was rather rusty, and in which the coal did not run free. Seeing the coal accumulate under the screen, he ran on, stretched his foot forward to pull the coal down, and in an instant the revolving-screen caught his pants and pulled him under, crushing him to death between the screen and wood-work. The breaker-boss was close by, and had just been scraping the coal down with a scraper kept there for that purpose, but his eyes were in another direction when young Garra made his

fatal mistake, and he did not see him until the moment he was caught, and when too late to save him.

ACCIDENT No. 34.—Joseph Knight, a driver-boss, aged twenty-seven years, was killed in the Nottingham shaft, Plymouth, May 12, 1884. His work was to watch and direct the hoisting and distributing of cars at the bottom of the shaft. Being in haste to gain lost time in hoisting coal—he, at the time of the accident, was attending the signal bell—gave signal to hoist before the car was right on the cage, it having run too far for the clutches, and without giving signal to stop, he stepped on the cage to pull the car back. The cage was instantly raised, and Knight was crushed and killed between the car and side of shaft. This accident was clearly the result of too much hurry.

ACCIDENT No. 39.—William Hayes, a footman at breaker-tower, was struck on his head by a small lump of coal which fell either from the ascending cage or from the landing above, at the Exeter breaker, West Pittston, May 16, 1884. The accident occurred at five o'clock, P. M., and he died at eight, P. M., the same evening. He was twenty-four years of age, married, but had no children.

ACCIDENT No. 40.—Taliesin Watters, a timber-man, aged thirty-two years, was killed in a singular manner in the No. 2 slope colliery, Nanticoke, May 22, 1884. David Gower, John E. Lewis, and the deceased, working together, were in the act of raising a collar, the two legs being previously placed in position. One end was placed on the leg and the other end was on Watters' shoulder, when his foot slipped, causing him to fall, and the weight of collar falling on his neck killed him almost instantly. He had carelessly placed a lump of coal under his feet to give him a higher elevation to stand on while lifting the collar, and this, turning under his feet, caused him to fall when the end of the timber was bearing on his shoulder.

ACCIDENT No. 54.—Patrick Corcoran, a fireman, aged sixty years, was severely scalded while attending the boilers at the Enterprise colliery, July 29, 1884, and died during the same day. He was working on the night shift as assistant fireman. About three o'clock, A. M., while standing with his hand on the injector-valve, one of the boilers suddenly cracked, allowing the water and steam escape so rapidly that Corcoran was instantly enveloped in the hot steam and fatally scalded. He died therefrom the same day. Subsequent examination of the boiler showed that the iron was burned, and had not received proper care by its attendents.

ACCIDENT No. 58.—Moscow Pola, a slate-picker, aged thirteen years, during a few minutes' intermission at the No. 2 breaker, Kingston, August 2, 1884, crawled into a chute, and was caught in a pair of cog-wheels, and had his leg crushed so that he died in a few hours after at the Wilkes-Barre hospital. He had no legitimate business in the place where he was hurt; but was stealing away to have a talk with a friend in another part of the structure.

ACCIDENT No. 74.—John Morinofskey, a slate-picker, aged seventeen

years, was suffocated in the dirt chute of the No. 3 breaker, West Nanticoke, October 13, 1884. The chute was blocked with dirt, and the deceased was sent there to shovel the dirt back and keep the telegraph chute clear. While he was thus engaged and by others drawing dirt into the railroad cars below, he was drawn through and smothered before any one was aware of his situation. He had been doing this work often, and ought to have been more careful.

TABLE No. 5.—*A list of accidents resulting in death in the Middle District of Ludent, for the year end-*

DATE	No. of accidents.	Names of persons killed.	Age.	Widows.	Orphans.	Nationality	Occupation.	Names of Collieries.
Jan. 15	1	John Bolaskey,	35			Hungarian	Laborer,	No. 2 Slope, Nanticoke,
23	2	John Stoddard,	26			American,	Laborer,	Black Diamond,
23	3	David R. Evans,	16			Welsh,	Driver,	No. 1 Shaft, Kingston,
Feb. 6	4	Michael Mishko,	18			Hungarian	Laborer,	No. 5 Breaker, Nanticoke,
12	5	Wm. H. Davies,	19			American,	Laborer,	Franklin,
13	6	Alex'r Stevens,	18			American,	Plane footman	Mill Creek Breaker,
13	7	Matthew Eisolo,	35	1		German,	Miner,	Empire,
16	8	Wm. H. Thomas,	51	1	1	Welsh,	Mine boss,	Franklin,
20	9	John Crosswaite,	53	1	5	Irish,	Laborer,	No. 10, Sugar Notch,
21	10	John Fred. Link,	30	1	1	German,	Miner,	No. 2, Red Ash,
22	11	Thos. John Jones,	13			Welsh,	Driver,	No. 2 Shaft, Nanticoke,
23	12	James Davy,	28	1	2	English,	Miner,	No. 1 Shaft, Nanticoke,
23	13	David H. Davies,	45	1	6	Welsh,	Miner,	No. 2 Slope, Nanticoke,
25	14	Sylves'r R. Brown,	17			American,	Driver,	Wanamie,
Mar. 1	15	Charles King,	22				Driver,	West End,
7	16	James Rock,	30			Austrian,	Laborer,	No. 2 Tunnel, Nanticoke,
7	17	Peter Friel,	45	1	4	Irish,	Miner,	No. 2 Shaft, Nanticoke,
12	18	Edward Bellows,	20	1		American,	Pumpman,	Avondale Air-shaft,
13	19	Lewis Lewis,	50	1	6	Welsh,	Driver boss,	Wyoming,
18	20	Andrew Hortak,	27	1		Hungarian	Laborer,	Midvale,
18	21	Michael Jones,	50			Welsh,	Miner,	Nottingham,
19	22	Thomas McGovern,	17			Irish,	Driver,	Henry,
23	23	Henry Doberstein,	35	1	1	German,	Miner,	No. 1 Shaft, Nanticoke,
24	24	John Garra,	10			Irish,	Slate-picker,	Hillman Vein Breaker,
April 2	25	John J. Gangloff,	27			American,	Miner,	No. 3, Plymouth,
3	26	William Hunt,	43			English,	Co. laborer,	Reynolds,
7	27	Jerry Lenahan,	20			Irish,	Sinker,	Avondale Air-shaft,
7	28	Joseph Prudhoe,	29	1	2	American,	Mechanic,	Avondale Air-shaft,
17	29	Edward Kelfer,	18			American,	Driver,	Grand Tunnel,
28	30	Wm. D. Evans,	19			Welsh,	Driver,	Reynolds,
28	31	Adam ——,	35			Polish,	Laborer,	Clear Spring,
29	32	Charles Duffy,	45	1	5	Irish,	Mason,	No. 2, Plymouth,
30	33	Daniel Price,	70	1		Welsh,	Laborer,	East Boston,
May 12	34	Joseph Knight,	27	1		American,	Driver boss,	Nottingham,
13	35	Charles Anderson,	23			Swede,	Laborer,	Prospect Colliery,
14	36	John E. Watkins,	45	1	6	Welsh,	Tracklayer,	No. 4 Slope, Nanticoke,
15	37	Dennis O'Brien,	43	1	4	Irish,	Miner,	No. 1 Slope, Nanticoke,
16	38	William Wilson,	24			Scotch,	Mason,	Baltimore Tunnel,
16	39	Henry Remelee,	20			American,	Driver,	West End,
16	40	William Hayes,	24	1		Irish,	Footman,	Exeter,
22	41	Taliesen Watters,	32	1	1	Welsh,	Timberman,	No. 2 Slope, Nanticoke,
June 1	42	Rich'd M. Phillips,	22			Welsh,	Miner,	Avondale,
10	43	John B. Carey,	67	1		Irish,	Miner,	No. 4, Plymouth,
10	44	John Quinn,	16			American,	Loader,	Wyoming Breaker,
13	45	Thomas Thomas,	23			Welsh,	Laborer,	No. 4 Slope, Nanticoke,
13	46	Frank Barton,	29	1	1	Polish,	Laborer,	Dodson,
14	47	John Phillips,	47	1	4	Welsh,	Miner,	No. 4, Plymouth,
16	48	Louis Hova,	24			Italian,	Miner,	Exeter,
24	49	William Thomas,	13			Welsh,	Door-boy,	Nottingham,
25	50	Robert Schultz,	33	1	3	Polish,	Miner,	No. 1, Red Ash,
July 8	51	William Levitzkey,	28	1	2	German,	Laborer,	Grand Tunnel,
8	52	Timothy Kelly,	40	1		Irish,	Miner,	Schooley,

zerne and Carbon counties, Pennsylvania, with remarks on the cause of each acci-ing December 31, 1884.

Remarks on the Causes of the Accidents.	Causes of the Accidents.								No. of accidents.
	Explosion of CH4 gas.	Falling of roof and coal.	Falling down shaft.	Crushed by mine cars.	Explosions of powder and blasts.	Miscellaneous underground.	On surface.	Total	
Instantly killed by a stack falling on him at the boilers,							1	1	1
Instantly killed by a thin flake of bone-coal falling on him,		1						1	2
Killed by a fall of rock in face of a gangway,		1						1	3
Was drawn into the No. 7 coal, in chute, and was suffocated,							1	1	4
Spine severely injured by coal rolling upon him; died February 24, at the hospital,		1						1	5
Jammed between cars while coupling them; died almost instantly,							1	1	6
Fatally injured by a fall of top coal; died shortly after reaching home,		1						1	7
Suffocated under a mass of fallen culm outside of mine,							1	1	8
Instantly killed by a fall of rock,		1						1	9
Instantly killed by a fall of top coal,		1						1	10
Fatally injured by being crushed between cars. Died the same day,				1				1	11
Fatally injured by a premature blast; died the following day,					1			1	12
Skull fractured by coal flying from a blast; died February 25,					1			1	13
Instantly killed; crushed between two cars,				1				1	14
Fell off a mule's back, and broke his neck,							1	1	15
Instantly killed by a fall of top coal,		1						1	16
Killed by a runaway car on underground slope,				1				1	17
Instantly killed by a mass of rock falling into the shaft upon him,						1		1	18
Ribs fractured by being thrown against a car while getting on it at head of slope,						1		1	19
Instantly killed by a fall of coal in gangway,		1						1	20
Instantly killed by a fall of top coal,		1						1	21
Skull fractured while riding on front of car; died March 25,				1				1	22
Fatally injured by a fall of slate; died in about two hours after,		1						1	23
Instantly killed; caught by the main breaker screen,							1	1	24
Killed by a fall of rock while working to assist a neighboring miner,		1						1	25
Fatally injured by being crushed between cars and rib or side,				1				1	26
Attempted to descend the shaft by sliding down on the rope, and loosing his hold fell to the bottom, and was instantly killed,			1					1	27
Fatally injured by attempting to slide down on rope to assist Lanahan, who had fallen down the shaft; he loosing his hold in the same manner. Died April 8, 1884,			1					1	28
Leg crushed under the railroad cars near breaker; died April 19,							1	1	29
Leg crushed under cars; died at the hospital, April 30,				1				1	30
Fatally hurt by a fall of rock, and died on the way out,		1						1	31
Instantly killed by stepping off the cage, and falling down shaft,			1					1	32
Instantly killed by cars on inside slope,				1				1	33
Caught by cage, and killed instantly. (See description of fatal accidents,)						1		1	34
Seriously injured May 13, and died at the Wilkes-Barre hospital during the same month; the accident occurred by a fall of coal,		1						1	35
Instantly killed by a runaway car on main slope,				1				1	36
Almost instantly killed by a fall of rock from top,		1						1	37
Instantly killed by being caught between a car and rib,				1				1	38
Fell under cars and had his thigh crushed; died under the surgeon's operation,				1				1	39
Skull fractured by a small lump of coal which fell from the breaker tower,							1		40
Instantly killed by falling, while having one end of a collar on his shoulder which fell on his neck, breaking it,						1		1	41
Killed by a piece of rock which fell from the roof of breast,		1						1	42
Fatally injured by a fall of rock; died the same day,		1						1	43
Arm and shoulder crushed between railroad cars; died the same evening,							1	1	44
Instantly killed by a fall of rock,		1						1	45
Instantly killed by stepping off the cage, and falling down shaft,			1					1	46
Fatally injured by a premature blast; died the following day,					1			1	47
Instantly killed; drill caught in bunton, and struck him down the shaft while being hoisted up on the cage,			1					1	48
Instantly killed by falling under a loaded car,				1				1	49
Skull fractured by a premature blast, died July 2,					1			1	50
Fatally hurt by a lump of coal flying from a blast; died in two hours,					1			1	51
Instantly killed by a fall of top coal,		1						1	52

TABLE No. 5—

DATE.	Number of accidents.	Names of persons killed.	Age.	Widows.	Orphans.	Nationality	Occupation.	Names of Collieries.
July 8	53	Sylv'r Losnefskey,	16			Polish,	Door-boy,	No. 1 Slope, Nanticoke,
14	54	William Bishop,	21			English,	Sinker,	No. 1 Shaft, Nanticoke,
29	55	Patrick Corcoran,	60	1		Irish,	Fireman,	Enterprise,
31	56	Michael Mando,	26	1	1	Hungarian	Loader,	No. 1 Breaker, Kingston,
31	57	Thomas Kearns,	36	1	5	Scotch,	Miner,	No. 5, Plymouth,
31	58	William Spargo,	35	1	4	English,	Miner,	No. 11, Lance,
Aug. 2	59	Moscow Pola,	13			Hungarian	Slate-picker,	No. 2, Kingston,
6	60	And. Madiefskey,		1	5	Hungarian	Laborer,	No. 2 Breaker, Nanticoke,
9	61	Joseph Shiner,	43			Hungarian	Miner,	Forty Fort,
9	62	Edward Nelson,	24			English,	Laborer,	Black Diamond,
15	63	Anth'y Gallagher,	14			Irish,	Door-boy,	Prospect,
16	64	Joseph Gutofskey,	32	1	3	Polish,	Laborer,	No. 3, West Nanticoke,
20	65	Enoch John,	35			Polish,	Miner,	Clear Spring,
23	66	James Delucken,	42			Italian,	Laborer,	Exeter,
28	67	Edward McGinty,	36	1	3	Irish,	Miner,	Mineral Spring,
30	68	Cas. Yokobofskie,	45	1		Polish,	Laborer,	Alden,
Sept. 9	69	Michael Connell,	35	1	5	Irish,	Laborer,	Clear Spring,
Oct. 8	70	Andrew Cree,	24			Scotch,	Carpenter,	No. 1 Shaft, Kingston,
9	71	Patrick Gallagher,	35			Irish,	Laborer,	Diamond,
10	72	George Hand,	37	1		English,	Miner,	No. 2, Red Ash,
10	73	Stephen Heywood,	19			Welsh,	Laborer,	
11	74	Geo. E. Williams,	30	1		English,	Miner,	No. 4 Slope, Nanticoke,
13	75	John Marinofsky,	17			Hungarian	Slate-picker,	No. 3 Breaker, Nanticoke,
13	76	Mike Okinga,	30	1		Hungarian	Miner,	No. 3, Kingston,
21	77	John Castle,	46	1	4	American,	Miner,	Baltimore Slope,
23	78	Andrew Johnson,	42			Swede,	Miner,	Maffit Colliery,
28	79	Henry Bray,	36	1	3	English,	Laborer,	Hollenback,
Nov. 7	80	Rich. P. Thomas,	35	1	2	Welsh,	Miner,	Nottingham,
10	81	Benjamin Rodda,	36	1	2	English,	Miner,	No. 4 Slope, Nanticoke,
13	82	James Hoban,	20			Irish,	Footman,	Midvale,
22	83	John Pomrinkey,	44	1	6	German,	Miner,	No. 2 Slope, Nanticoke,
22	84	Edward Smith,	23			Irish,	Slate-picker,	Maffit Breaker,
24	85	Thomas Barrett,	14			Irish,	Door-boy,	Henry,
24	86	Patrick Dailey,	25			Irish,	Laborer,	Prospect,
25	87	William Woods,	35	1	2	Irish,	Miner,	Harry E.,
Dec. 7	88	William McCabe,	26			Irish,	Headman,	Baltimore Shaft,
9	89	Thomas McDonald,	37			Irish,	Miner,	Mineral Spring,
11	90	Doml'k Uskavage,	35	1	2	Polish,	Miner,	No. 10, Sugar Notch,
11	91	Jno. Filonosways,	32			Polish,	Miner,	
13	92	John Kane,	26	1		Irish,	Miner,	Bennett,
15	93	James Mason,	35	1	4	Italian,	Laborer,	Schooley,
16	94	Ed. McLaughlin,	25			Irish,	Miner,	Baltimore Slope,
16	95	Jacob Shafer,	44	1	1	German,	Miner,	No. 4 Shaft, Plymouth,
19	96	James Jones,	20			Welsh,	Miner,	Mineral Spring,
19	97	Anthony Carling,	40	1	6	Irish,	Miner,	No. 10, Sugar Notch,
		Totals,		48	112			

Continued.

Remarks on the Causes of the Accidents.	CAUSES OF THE ACCIDENS.								Number of accidents.
	Explosion of CH4 gas	Falling of roof and coal.	Falling down shafts.	Crushed by mine cars.	Explosions of powder and blasts.	Miscellaneous underground.	On surface.	Total.	
Killed by cars while asleep lying on the track,				1				1	53
Instantly killed by falling from a platform in the shaft,			1					1	54
Fatally scalded by steam escaping through a cracked boiler,							1	1	55
Crushed between railroad car and breaker-frame,							1	1	56
Killed by a blast while returning to relight the match,					1			1	57
Fatally injured by cars running upon him in slope; died the same day,				1				1	58
Leg crushed in cog-wheels; died the same day at the hospital,							1	1	59
Fell under cars by jumping off a train; died the next day,							1	1	60
Skull fractured by coal flying from a blast; died August 11,					1			1	61
Severely burned by an explosion of gas; died August 16,	1							1	62
Instantly killed by being caught between a car and prop,				1				1	63
Instantly killed by a fall of bony coal,		1						1	64
Fatally injured by a fall of rock; died the same day,		1						1	65
Fatally injured by a loaded car running upon him; died the same day,				1				1	66
Killed by a fall of coal while cutting a prop away from under it,		1						1	67
Instantly killed by a fall of rock,		1						1	68
Killed by a fall of "black rock;" the miner was slightly hurt at the same time,		1						1	69
Killed by being run over by a trip of cars on the gravity-plane,				1				1	70
Instantly killed by a fall of bony coal,		1						1	71
Both were instantly killed by a fall of rock in the Red Ash seam,		2						2	73
Fatally injured by a premature blast; died the same day,					1			1	74
Suffocated by being drawn into the dirt-chute in the breaker,							1	1	75
Leg broken by a fall of coal; died shortly after from loss of blood,		1						1	76
Leg broken by a fall of roof; died October 24,		1						1	77
Killed by a fall of rider coal in the Ross seam,		1						1	78
Crushed between a car and rib; died at the top of shaft while being conveyed home,				1				1	79
Instantly killed by a fall of top coal,		1						1	80
Instantly killed by a fall of rock and coal,		1						1	81
Head jammed between two cars; died instantly,				1				1	82
Fatally injured by a premature blast; died November 28,					1			1	83
Severely squeezed between a railroad car and wood-work of breaker; died November 24,							1	1	84
Instantly killed by being knocked off the cage down the shaft,			1					1	85
Instantly killed by a fall of rider coal,		1						1	86
Leg broken and otherwise injured by a fall of rock; died the same day,		1						1	87
Instantly killed by falling down the shaft,			1					1	88
Arm crushed and eyes severely injured by a premature blast; his arm was amputated at the hospital, and he died December 13,					1			1	89
The first was instantly killed and the second fatally injured by an explosion of fire-damp; caused by stopping the fan without proper warning,	1 1							1 1	90 91
Face and hands burned by an explosion of gas; died December 17,	1							1	92
Instantly killed by a fall of rock,		1						1	93
Fatally injured by a blast; he was returning to replace the squib, believing that the first had missed when the "shot" fired; died December 17,					1			1	94
Instantly killed by a fall of rock,		1						1	95
Instantly killed by a fall of rider coal,		1						1	96
Almost instantly killed by a fall of bony coal,		1						1	97
Totals,	4	37	8	18	11	4	15	97	

TABLE No. 6.—*A list of serious but non-fatal accidents in the Middle District of accident, for the year*

DATE.	Number of accidents.	Names of Persons Injured.	Age.	Wife.	Children.	Nationality.	Occupation.	Names of the Collieries.
Jan. 4	1	Ignetz Voskavay,	40	1	3	Polish, . .	Miner, .	No. 2 Tunnel, Nanticoke,
8	2	Edward Thomas,	38	1	2	Welsh, . .	Miner, . . .	Franklin,
9	3	Dennis Finn, . .	40	1	. .	Irish, . . .	Miner, . .	Pine Ridge,
9	4	Rodger Boyle, .	50	1	6	Irish, . . .	Door-tender,	Gaylord,
15	5	John Kerrigan, .	20	. .	. .	Irish, . . .	Runner, . . .	Bennett,
15	6	John Proshinskey	30	. .	.	Polish, . .	Miner, . .	No. 1 Shaft, Nanticoke,
21	7	John Smuggle, .	40	1	3	Polish, . .	Laborer, . .	No. 2 Shaft, Nanticoke,
21	8	Pat. McAndrew, .	24	. .		American, .	Loc. engineer,	Baltimore Tunnel,
22	9	Martin Mutch, .	35	. .		German, .	Laborer, . .	Nottingham Breaker,
24	10	Ed. J. Edwards, .	42	1	2	Welsh, . .	Miner, . . .	Warrior Run,
31	11	P. C. Newman, .	29	. .		Swede, . .	Miner, . . .	Prospect,
Feb. 1	12	John Casey, . . .	40	1	6	Irish, . . .	Laborer, . .	Empire Breaker, . . .
1	13	Con. McCall, . .	36	1	4	Irish, . . .	Miner, . . .	Dorrance,
4	14	D. H. Williams, .	15	. .	. .	Welsh, . .	Driver, . . .	No. 5, Plymouth,
6	15	Henry G. Kulp, .	17	. .	. .	American, .	Loader, . . .	No. 1 Breaker, Nanticoke,
6	16	Daniel Powell, .	26	1	3	English, . .	Miner, . . .	Dorrance,
13	17	John Haley, .	35	1	3	Irish, . .	Miner, . .	Baltimore Slope, . . .
14	18	Andrew Sweek, .	22	. .	. .	Hungarian,	Laborer, . .	Fuller Colliery, . . .
16	19	John Gonor, . .	23	. .	. .	Hungarian,	Laborer, . .	Fuller Colliery, . . .
19	20	Henry Perkins, .	14	. .	. .	English, . .	Driver, . . .	Nottingham,
20	21	Joseph Tomasky,	35	1	. .	Polish, . .	Miner, . . .	No. 10 Sugar Notch, .
20	22	Thomas Rees, . .	13	. .	. .	American, .	Door-boy, .	Mineral Spring, . . .
22	23	Albert Walkins, .	40	. .	. .	English, . .	Miner, . . .	No. 1 Shaft, Nanticoke,
23	24	Peter Lawler,	16	. .	.	English, . .	Driver, . . .	No. 1 Slope, Nanticoke,
26	25	John McAndrew,	17	. .	. .	Irish, . . .	Driver, . . .	No. 1 Slope, Nanticoke,
March 6	26	John J. Martin,	45	. .	. .	Irish, . .	Miner, . . .	Midvale,
11	27	Patrick Monahan,	70	1	8	Irish, . .	Laborer, . .	Diamond,
15	28	Patrick Hayes,	35	1	.	Irish, . . .	Miner, . . .	Midvale,
21	29	William P. Rees,	43	. .	. .	Welsh, . .	Laborer, . .	No. 1 Shaft, Nanticoke,
22	30	Robert Donaby, .	26	1	1	English, . .	Miner, . . .	Fuller,
28	31	Jonah Willis, .	14	. .	. .	English, . .	Driver, . . .	No. 2 Shaft, Nanticoke,
April 1	32	Thomas Allen, .	20	. .	. .	English, . .	Footman, .	Hollenback,
3	33	John Vivian, . .	34	1	4	English, . .	Miner, . . .	Baltimore Tunnel, . .
11	34	Wm. Chemjetz,	24	. .	. .	Polish, . .	Laborer, .	Maffit, . .
12	35	Thomas Gorman,	13	. .	. .	Irish, . . .	Door-boy, .	Enterprise,
12	36	Joseph Botofskey,	21	. .	. .	Polish, . .	Laborer, . .	No. 1 Shaft, Nanticoke.
14	37	Jos. H. Sprague,	23	1	. .	English, . .	Engineer, . .	Dodson,
16	38	Thomas Brown, .	16	. .	. .	Irish, . . .	Driver, . . .	No. 1 Slope, Nanticoke,
17	39	Frank Bozinskey,	35	1	. .	Polish, . .	Miner, . . .	No. 2 Tunnel, Nanticoke,
22	40	Geo. McReynolds,	42	1	6	Scotch, .	Miner, . . .	Alden,
23	41	John Meehan, . .	18	. .	. .	American, .	Driver, . . .	Wyoming,
26	42	Ben. J. Lewis, .	18		. .	Welsh, . .	Driver, . . .	Dodson,
26	43	Thomas Eaton, .	42	1	7	Irish, . .	Track-layer, .	Alden,
28	44	George Cabour, .	23	1	. .	Hungarian,	Laborer, . .	No. 2, Kingston, . .
29	45	Alex. Vishnifskey	.	. .	. .	Polish, . .	Laborer, . .	No. 2 Tunnel, Nanticoke,
May 1	46	Charles Lynn, .	21	. .	. .	. . . . .	Runner, . . .	Mineral Spring, . .
3	47	Charles Spittle, .		. .	. .	. . . . .	Laborer, . .	Hillman Slope, ...
15	48	Mich. Copsavage	43	. .	. .	Polish, . .	Laborer, . .	Reynolds,
15	49	William McCarty,	30	. .	. .	Irish, . . .	Miner, . . .	Midvale,
16	50	Mathias Mische, .	25	. .	. .	German, .	Miner, . . .	East Boston,
17	51	Mathew Toblin, .	33	1	2	Irish, . . .	Footman, . .	No. 5, Plymouth, . .

Luzerne and Carbon counties, Pennsylvania, with remarks on the cause of each ending December 31, 1884.

Remarks on Extent of Injury and Cause of Accidents.	Explosion of CH4 gas.	Falling of roof and coal.	Falling down shafts.	Crushed by mine cars.	Explosion of powder and blasts.	Miscellaneous.	On surface.	Totals.	Number of accidents.
Arm broken by a piece of roof falling on it while he was using a bar to pry coal down,		1						1	1
Leg broken and ankle sprained by a fall of coal,		1						1	2
Hands and face burned by an explosion of gas,	1							1	3
Arm crushed and had to be amputated, by falling under cars,				1				1	4
Severely squeezed by falling under cars,				1				1	5
Face severely bruised and cut by returning to a supposed missed shot, which exploded as he was approaching it,					1			1	6
Leg broken and flesh bruised by falling under cars,				1				1	7
Foot crushed by locomotive wheel running over it,						1		1	8
Left leg broken by being knocked over the dump by a car,							1	1	9
Thigh broken by a fall of rock in air-way,		1						1	10
Compound fracture of leg at ankle and collar-bone fractured by coal falling on him,		1						1	11
Knee-cap fractured by a prop rolling upon him while unloading props,							1	1	12
Face and hands burned by an explosion of fire-damp,	1							1	13
Leg broken and the other foot squeezed by falling under cars,				1				1	14
Severely squeezed around his hips by being caught between cars,							1	1	15
Face and hands burned by an explosion of fire-damp,	1							1	16
Leg broken and cuts on head by a fall of rider coal,		1						1	17
Ankle severely injured by a car slipping off blocks while trying to place it on track,				1				1	18
Shoulder blade fractured by being squeezed between wagon and building,							1	1	19
Skull fractured by a kick from mule; recovered all right,						1		1	20
Face and hands burned by an explosion of fire-damp,	1							1	21
Arm crushed, causing amputation, by being caught between cars,				1				1	22
Ankle fractured by a fall of roof coming upon him while putting a prop up,		1						1	23
Face badly bruised by a kick from a mule,						1		1	24
Small bone of arm broken by a small piece of bony coal falling,		1						1	25
Nose broken and cuts on arm and shoulder by a premature blast,					1			1	26
Thigh severely bruised by falling under a car,				1				1	27
Face and hands burned by an explosion of fire-damp,	1							1	28
Leg broken by a piece of rock falling on him,		1						1	29
Severely cut on face by returning to a supposed missed shot, which exploded,					1			1	30
Leg broken by being caught in trace-chain of mule team,						1		1	31
Wrist broken by being jammed between a car and post,				1				1	32
Leg broken and body severely injured by a fall of bony coal,		1						1	33
Leg broken by being caught between two lumps of coal on platform,						1		1	34
Face and hands severely burned by crawling on top of a fall and firing a small quantity of fire-damp,	1							1	35
Leg broken by a fall of rock,		1						1	36
Leg broken by falling off a platform in air-shaft,						1		1	37
Leg broken; caught between a car and sheet-iron lying along the road,				1				1	38
Severe cuts on head and side, bruised by being blown by air escaping from a fall of rock,						1		1	39
Arm broken and side bruised by a blast bursting through pillar,					1			1	40
Hips and knee bruised; caught between car and rib,				1				1	41
Arm fractured by being caught between cars,				1				1	42
Arm fractured; caught between car and prop,				1				1	43
Head severely squeezed between cars,							1	1	44
Hip dislocated by a fall of top coal,		1						1	45
Needle ran through his neck by falling down a pitching breast,						1		1	46
Leg broken by a fall of rider coal,		1						1	47
Head and face cut and bruised by putting his head under a car,				1				1	48
Face and hands burned by an explosion of gas,	1							1	49
Severe flesh wounds from a premature blast,					1			1	50
Shoulder bone and three ribs fractured; crushed between cars,				1				1	52

TABLE No. 6.—

DATE.	Number of accidents.	Names of Persons Injured.	Age.	Wife.	Children.	Nationality.	Occupation.	Names of the Collieries.
May 19	52	Philip Hines,	44	1		Irish,	Miner,	No. 1, Kingston.
19	53	Peter Haines,	22			American,	Miner,	No. 9, Sugar Notch,
20	54	Price Jones,	35	1		Welsh,	Miner,	Diamond,
20	55	Pat. McWilliams,	18			Scotch,	Driver,	Henry,
20	56	Albert Perkins,	32	1		American,	Miner,	No. 2 Slope, Nanticoke,
20	57	Pat. Dailey,	26			Irish,	Laborer,	Midvale,
21	58	Chas. Anderson,	23			Swede,	Laborer,	Prospect,
21	59	John Evans,	48	1		Welsh,	Miner,	No. 2 Slope, Nanticoke,
26	60	Herbert H. Powell	13			English,	Door-boy,	Shaft 2, Nanticoke,
27	61	John Coyle,	56	1	2	Irish,	Miner,	No. 5, Plymouth,
28	62	Patrick Boyle,	44		2	Irish,	Laborer,	Gaylord,
29	63	George Laffey,	21			Polish,	Laborer,	Dodson,
29	64	Michael Burns,	45	1	3	Irish,	Miner,	No. 9, Sugar Notch,
30	65	John Shepandlok,	26			Hungarian,	Laborer,	Bennett,
30	66	Andrew Hahn,	25			German,	Miner,	No. 3, Plymouth,
31	67	D. J. Humphrey,	45	1		Welsh,	Miner,	No. 2 Shaft, Nanticoke,
June 2	68	Simon Jones,	20			Welsh,	Runner,	Prospect,
4	69	Patrick Powers,	21			Irish,	Sinker,	No. 1 Shaft, Nanticoke,
5	70	Michael McGoff,	26			Irish,	Miner,	No. 2 Shaft, Nanticoke,
10	71	Henry Bossard,	16			American,	Loader,	Empire Breaker,
10	72	Charles Smith,	31	1		German,	Miner,	East Boston,
12	73	William Adams,	14			American,	Driver,	Exeter,
14	74	Albert Downs,	18			English,	Footman,	Lance No. 11,
24	75	Wm. Thornton,	14			Irish,	Driver,	Laurel Run,
26	76	Mich. Tokarcik,				Hungarian,	Laborer,	Laurel Run,
27	77	Patrick Ryan,	14			Irish,	Driver,	Prospect,
July 1	78	John Lake,	38	1	3	English,	Miner,	Hillman Vein,
7	79	John Crea,	44	1	6	Irish,	Laborer,	Baltimore Tunnel,
9	80	Lewis Molitzkey,	25	1	1	Polish,	Miner,	No. 1 Shaft, Nanticoke,
9	81	Martin Stopbanos,	22			Hungarian,	Laborer,	No. 1 Shaft, Nanticoke,
10	82	David Lloyd,	30			Welsh,	Miner,	No. 2 Shaft, Nanticoke,
11	83	John McVey,	48	1	2	Irish,	Laborer,	Forty Fort,
17	84	Joseph Hackett,	48	1	4	American,	Machinist,	Pettibone,
19	85	Michael Krotza,	20			Polish,	Miner,	No. 4 Tunnel, Nanticoke.
22	86	Michael Brennen,	22			Irish,	Laborer,	Enterprise,
22	87	John G. Thomas,	39	1	5	Welsh,	Miner,	No. 2, Plymouth,
23	88	Evan Hughes,	28			Welsh,	Miner,	Hartford,
23	89	Wm. Mikewskie,	38	1	3	Polish,	Laborer,	Dodson,
23	90	Daniel K. Rees,	16			Welsh,	Driver,	Dodson,
26	91	Charles Donde,	38	1	3	Irish,	Miner,	No. 1, Kingston,
28	92	George Cavell,	20			English,	Coupler,	Prospect,
30	93	Dennis Morrisey,	14			American,	Slate-picker,	Empire Breaker,
Aug. 4	94	A. Robertzkey,	35			Polish,	Laborer,	Clear Spring,
9	95	Aug. Nelson,	30			Swede,	Miner,	Black Diamond,
11	96	Charles Drew,	30			English,	Miner,	No. 4 Slope, Nanticoke,
12	97	Henry Hauck,	15			American,	Driver,	No. 2 Shaft, Nanticoke,
12	98	Charles Morgan,	22			German,	Laborer,	Clear Spring,
14	99	Joseph Nick,	36	1		Polish,	Miner,	No. 1 Shaft, Nanticoke,
18	100	John Bell,	30	1	1	Polish,	Miner,	Forty Fort,
23	101	John Zelinskey,	40	1	6	Polish,	Miner,	Reynolds,
25	102	Wm. McGregor,	18			American,	Driver,	Conyngham,
27	103	Jere. Coleman,	35	1	3	English,	Headman,	Lance, or No. 11,
27	104	Willie Burk,	16			American,	Driver,	Baltimore Slope,
28	105	William Tait,	37	1	4	English,	Miner,	No. 10, Sugar Notch,
30	106	Joseph James,	21			American,	Laborer,	Stanton, or No. 7,
Sept. 8	107	Patrick Lenahan,	43	1	3	Irish,	Laborer,	No. 10, Sugar Notch,
8	108	Michael Hilbert,	40	1	5	Irish,	Headman,	No. 10, Sugar Notch,
9	109	Lawrence Duffy,	23	1		Irish,	Sinker,	Woodward, No. 1,
10	110	Hugh Johnson,	21			Irish,	Laborer,	Baltimore Slope,

Continued.

Remarks on Extent of Injury and Cause of Accidents.	Explosion of CH4 gas.	Falling of roof and coal.	Falling down shafts.	Crushed by mine cars.	Explosion of powder and blasts.	Miscellaneous.	On surface.	Totals.	Number of accidents.
Left leg fractured and hand crushed by a fall of coal,		1						1	52
Leg broken by a fall of coal,		1						1	53
Leg severely bruised by a fall of coal,		1						1	54
Severely squeezed between a car and rib,				1				1	55
Leg and arm fractured by a fall of coal,		1						1	56
Face and hands burned by an explosion of fire-damp,	1							1	57
Severely injured by a fall of coal; died at the hospital,		1						1	58
Leg broken by a lump of coal rolling upon it,						1		1	59
Hand cut off by loaded cars passing over it,				1				1	60
Body badly injured by a fall of rock,		1						1	61
Leg crushed by falling under cars; had to be amputated,				1				1	62
Leg and arm broken by a fall of bony coal,		1						1	63
Head and face severely cut by coal flying from a blast,					1			1	64
Thigh broken by a fall of rock,		1						1	65
Spine fractured by a fall of rock,		1						1	66
Three ribs fractured by a fall of bony coal,		1						1	67
Wrist fractured by being caught between a car and a prop,				1				1	68
Skull fractured; struck by a piece of rock falling into shaft,						1		1	69
Leg broken by a premature blast,					1			1	70
Foot crushed; slipped under a car,							1	1	71
Hip dislocated by a fall of top coal,		1						1	72
Skull fractured by a falling trustling,							1	1	73
Part of hand cut off by a lump of coal falling from top of shaft,						1		1	74
Heel crushed; got under a car while playing with it,							1	1	75
Body severely squeezed between a car and rib,				1				1	76
Knee severely cut by falling under cars,				1				1	77
Skull slightly fractured by a premature blast,					1			1	78
Left thigh broken and body hurt by a fall of coal,		1						1	79
Face, hands, and back severely burned. Went up to the face of breast knowing there was gas there and exploded it,	1							1	80
Face and hands severely burned. Went up to the face of breast knowing there was gas there and exploded it,	1							1	81
Severe bruises and cuts on his face, received by a premature blast,					1			1	82
Left arm broken by being caught between cars,				1				1	83
Severe scalp wound; struck on the head by a falling flange,						1		1	84
Cuts on face and breast by an explosion of powder which he was driving into a hole,					1			1	85
Face and hand burned by an explosion of a small quantity of gas,	1							1	86
Face and body bruised by a fall of coal,		1						1	87
Severely bruised on body by a premature blast,					1			1	88
Leg broken by a car tipping and striking him on his leg,				1				1	89
Rib fractured by a kick from a mule,						1		1	90
Arm fractured by a fall of coal,		1						1	91
Leg severely cut and bruised by being run over by the mine locomotive; had to be amputated,				1				1	92
Leg and head injured by falling down a chute,							1	1	93
Ankle disjointed by a fall of roof,		1						1	94
Face and hands slightly burned by an explosion of gas. His brother, Edward Nelson, was fatally burned the same time,	1							1	95
Foot badly bruised by a fall of rock,		1						1	96
Leg broken by being struck by coal flying from a runaway car on the slope,						1		1	97
Foot severely injured by a fall of rock,		1						1	98
Leg broken in two places by a fall of coal,		1						1	99
Face and hands burned by an explosion of powder,					1			1	100
Severely cut on his leg by coal rolling upon it,						1		1	101
Arm broken and bruised by a vicious mule jumping upon him,						1		1	102
Facial bone fractured by a kick from a mule,						1		1	103
Small bone of leg broken and a slight cut on his head; struck his head against the top and fell under the cars,				1				1	104
Face and hands burned by an explosion of gas,	1							1	105
Breast bone fractured; car jumped off the track against him,				1				1	106
Back slightly hurt and face and hands slightly burned by an explosion of gas,	1							1	107
Leg broken; caught between cars on the surface,							1	1	108
Leg broken; machine bar fell on it at the bottom of the shaft,						1		1	109
Hand severely crushed and arm broken by a fall of slate from roof,		1						1	110

TABLE No. 6.—

DATE.	Number of accidents.	Names of Persons Injured.	Age.	Wife.	Children.	Nationality.	Occupation.	Names of the Collieries.
Sept. 13	111	Patrick McGuire,	60	1	. .	Irish, . . .	Miner, . . .	No. 1 Slope, Nanticoke,
13	112	John Evans, . .	43	.	. .	Welsh, . .	Miner, . . .	Warrior Run, ...
16	113	Owen Conway, .	15	. .	. .	Irish, . . .	Driver, . . .	Exeter, ...
18	114	Francis Frew, .	33	1	2	Swede, . .	Miner, . . .	Enterprise, ...
19	115	John Snyder, . .	23	.	. .	German, .	Runner, . .	No. 2 Shaft, Nanticoke,
22	116	Wm. Scoopskie, .	28	1	.	Polish, . .	Miner, . . .	No. 9, Sugar Notch, .
25	117	Alva Williams, .	16	.	.	Welsh, . .	Driver, . . .	Clear Spring,
Oct. 4	118	John Knefskey, .	. .	. .	. .	Polish, . .	Laborer, . .	No. 2 Shaft, Nanticoke,
7	119	John S. Williams,	65	. .	. .	Welsh, . .	Miner, . . .	Reynolds, . .
7	120	Charles Eshorn, .	35	1	. .	German, .	Miner, . . .	No. 1 Shaft, Nanticoke,
8	121	Thomas R. Butler,	50	1	6	Welsh, . .	Brattice-man,	Wyoming, ...
9	122	John Vitskofskey,	30		. .	Hungarian,	Laborer, . .	Black Diamond, . .
9	123	John Tucker, .	42	1	4	English, .	Miner, . .	Hollenback, . .
10	124	Robert McFadden	47	1	8	Irish, . .	Miner, . . .	No. 2 Shaft, Nanticoke,
11	125	Henry Fogel, . .	30	. .	. .	German, .	Oiler, . . .	Reynolds, No. 16, . .
14	126	August Barinskey	20	. .	. .	Polish, . .	Laborer, . .	Black Diamond, . . .
15	127	John Haswell, .	16	. .	. .	English, . .	Driver, . . .	No. 1 Shaft, Nanticoke,
17	128	Henry Dwilin, .	25	1	2	English, . .	Miner, . .	No. 5, Plymouth, . . .
21	129	Con. McCall, . .	35	1	. .	Irish, . . .	Miner, . . .	Dorrance, ...
27	130	William Purcel, .	17	. .	. .	English, . .	Driver, . .	Pine Ridge, . .
30	131	William Kamp, .	27	. .	. .	English, . .	Miner, . . .	No. 1 Shaft, Nanticoke,
Nov. 10	132	Ralph Turnbull, .	25	1	. .	English, . .	Miner, .	No. 1 Shaft, Nanticoke,
10	133	L. Lovindofskey,	19	. .		Polish, . .	Laborer, .	
13	134	Michael McGuire,	23	1	. .	Irish, . . .	Headman, . .	Diamond, ...
14	135	John Keogh, . .	23	1	. .	American, .	Footman, .	Baltimore Tunnel, .
14	136	MichaelSikullskey	28	1	. .	Polish, .	Miner, . . .	No. 2 Slope, Nanticoke,
14	137	John Riley, .	35	.	. .	Irish, . . .	Laborer, . .	Susquehanna Coal Co.
15	138	Thomas J. Rees, .	14	. .	. .	Welsh, . .	Door-boy, . .	Lance, No. 11, ...
15	139	Thomas McDowell	15	. .		Irish, . . .	Driver, . . .	Maltby, ...
17	140	John Farilicks, .	26	1	2	Polish, . .	Laborer, . .	No. 2, Plymouth, . .
17	141	Martin Connors,	35	1	2	Irish, . . .	Miner, .	Wyoming, ...
19	142	Joseph Solomon,	. .	1	1	Polish, . .	Laborer, . .	Grand Tunnel, . . .
21	143	William O'Neal,	. .	. .	. .	Irish, . .	Driver, . .	Forty Fort, . . .
26	144	Richard Jennings,	36	. .	. .	English, . .	Miner, . . .	No. 1 Shaft, Nanticoke,
24	145	LewisHonneywell	18	. .	. .	American, .	Driver, .	Bennett, . .
27	146	Robert Smith, .	32	1	4	English, . .	Miner, . . .	No. 4 Slope, Nanticoke,
27	147	Evan E. Evans, .	27	. .	. .	Welsh, . .	Miner, . .	Franklin, ...
28	148	David Butler, . .	14	. .	. .	Welsh, . .	Door-boy, . .	Wyoming, ...
Dec. 2	149	Charles Benjamin	31	. .	. .	American, .	Miner, . . .	Laurel Run, ...
2	150	Richard Bowen, .	40	1	4	English, . .	Miner, . . .	Clear Spring, ...
2	151	Martin Welch, .	44	1	5	Irish, . . .	Miner, . . .	No. 9, Sugar Notch, .
5	152	Evan Thomas, . .	15	. .	. .	Welsh, . .	Driver, . . .	No. 1 Shaft, Nanticoke,
8	153	John Williams, .	43	. .	. .	English, . .	Miner, . . .	No. 1 Shaft, Nanticoke,
8	154	John Killeen, . .	33	1	4	Irish, . .	Miner, . . .	Black Diamond, . .
11	155	Adam Lobnoskey,	32	. .	. .	Polish, . .	Miner, . . .	No. 10, Sugar Notch,
11	156	Stanley Woloskey	20	. .	. .	Polish, . .	Laborer, . .	
12	157	John Waskoe, . .	38	1	3	German, .	Miner, . . .	No. 2 Shaft, Nanticoke,
16	158	Joseph Shema, .	35	1	. .	Hungarian,	Miner, . . .	No. 2 Slope, Nanticoke,
17	159	Alex'der Samuels	19	. .	. .	Welsh, . .	Driver, . . .	Grand Tunnel, .
19	160	George Moyer, .	22	.	. .	American, .	Teamster, . .	No. 2 Breaker, N'coke,
20	161	John Dorshaw, .	31	1	3	Polish, . .	Laborer, . .	Wyoming, ...
			. .	68	166			

One hundred and forty-one accidents were reported as only very slightly injured, which are not included in the above list; adding which increases the total number of non-fatal accidents to three hundred and one (301).

Continued.

Remarks on Extent of Injury and Cause of Accidents.	Explosion of CH4 gas.	Falling of roof and coal.	Falling down shafts.	Crushed by mine cars.	Explosion of powder and blasts.	Miscellaneous.	On surface.	Totals.	Number of accidents.
Leg broken; caught between a car and a plank,	.	.	.	1	.	.	.	1	111
Knee-cap fractured by a fall of rock,	.	1	.	.	.	.	.	1	112
Hands burned and cut on face by an explosion of locomotive boiler cap. The engineer, Ed. Mackin, and his helper, Peter Welsh, were also slightly burned at the same time, but only very slightly,	1	.	.	.	.	.	.	1	113
Foot severely bruised by rock rolling upon it,	.	.	.	.	.	1	.	1	114
Leg badly crushed by a car running over it,	.	.	.	1	.	.	.	1	115
Back bruised and ankle sprained by a fall of coal,	.	1	.	.	.	.	.	1	116
Leg broken by a fall of rock,	.	1	.	.	.	.	.	1	117
Hip-bone fractured by a fall of rock,	.	1	.	.	.	.	.	1	118
Cut on head, back, and leg by a fall of coal,	.	1	.	.	.	.	.	1	119
Leg broken by a blast; made the match too short,	.	.	.	.	1	.	.	1	120
Three ribs fractured; tripped by plane-rope and fell,	.	.	.	.	.	1	.	1	121
Hand cut almost off by a fall of rock,	.	1	.	.	.	.	.	1	122
Collar-bone fractured; squeezed between a car and rib,	.	.	.	1	.	.	.	1	123
Spine fractured by a fall of top coal; died in November,	.	1	.	.	.	.	.	1	124
Thumb crushed and slight cuts on hand and arm; caught in the cog-wheels,	.	.	.	.	.	.	1	1	125
Small bone in his foot broken by a piece of falling slate,	.	1	.	.	.	.	.	1	126
Three ribs fractured by falling under cars,	.	.	.	1	.	.	.	1	127
Seriously injured about his head and shoulders by a fall of boney coal,	.	1	.	.	.	.	.	1	128
Face and hands slightly burned by an explosion of gas,	1	.	.	.	.	.	.	1	129
Thigh broken by falling under cars,	.	.	.	1	.	.	.	1	130
Face and hands burned by an explosion of gas,	1	.	.	.	.	.	.	1	131
While driving the needle into a charge of powder, in a hole with the hammer, the charge exploded, destroying Turnbull's left eye and seriously injuring the other eye, and bruised his arm; Lovindofskey was also injured, but not serious,	.	.	.	.	1	.	.	1	132
	.	.	.	.	1	.	.	1	133
Painfully bruised by falling under cars at top of inside slope,	.	.	.	1	.	.	.	1	134
Foot crushed by being caught between cars,	.	.	.	1	.	.	.	1	135
Severely injured by a blast; he cut the match too short,	.	.	.	.	1	.	.	1	136
Leg broken by being caught by a car on the surface,	.	.	.	.	.	.	1	1	137
Ribs fractured by being jammed between cars,	.	.	.	1	.	.	.	1	138
Leg and arm broken by a car running upon him,	.	.	.	1	.	.	.	1	139
Hips injured by a falling rock; not supposed serious,	.	1	.	.	.	.	.	1	140
Leg broken and body bruised by a fall of rider coal,	.	1	.	.	.	.	.	1	141
Severely cut on his arm by a fall of top coal,	.	1	.	.	.	.	.	1	142
Severely kicked on his face by a mule,	.	.	.	.	.	1	.	1	143
Three ribs fractured and ankle disjointed by falling under cars,	.	.	.	1	.	.	.	1	144
Leg broken by a car running upon him,	.	.	.	1	.	.	.	1	145
Face and arms slightly burned by an explosion of gas,	1	.	.	.	.	.	.	1	146
Thigh-joint dislocated by a fall of coal from side of gangway,	.	1	.	.	.	.	.	1	147
Foot caught and threw him under a car, where his arm was severely crushed; it was thought that amputation of the arm would be necessary,	.	.	.	1	.	.	.	1	148
Hip dislocated by a fall of boney coal,	.	1	.	.	.	.	.	1	149
Leg broken by a fall of rock,	.	1	.	.	.	.	.	1	150
Face, hands, and arms burned by an explosion of fire-damp,	1	.	.	.	.	.	.	1	151
Two toes crushed by being run over by cars,	.	.	.	1	.	.	.	1	152
Arm broken and a blasting-tube driven through his thigh by a blast,	.	.	.	.	1	.	.	1	153
Arm crushed, so as to require amputation, by a fall of rock,	.	1	.	.	.	.	.	1	154
Both were slightly burned on hands and faces by an explosion of gas, caused by the fan stopping; two others were fatally injured the same time,	2	.	.	.	.	.	.	2	155
									156
Leg broken by a fall of slate which he was in the act of prying down,	.	1	.	.	.	.	.	1	157
Face and hands painfully burned by an explosion of gas,	1	.	.	.	.	.	.	1	158
Leg broken by falling under cars when riding on the bumper,	.	.	.	1	.	.	.	1	159
Hand crushed while coupling railroad cars,	.	.	.	.	.	.	1	1	160
Leg broken by a fall of coal which he was in the act of prying down,	.	1	.	.	.	.	.	1	161
	22	49	.	39	17	21	13	161	

TABLE No. 7.—*Showing number of days worked by the breakers, average tons of coal mined per day, number of persons employed, tons of coal mined per employé, persons injured, persons killed, tons of coal mined per persons injured and killed, tons of coal mined per life lost, ratio of employés to the persons injured and killed, total tons of coal mined, kegs of powder used, and mules and horses employed during 1884.*

LEHIGH VALLEY COAL COMPANY.

NAMES OF THE COLLIERIES.	Number of days worked by breaker.	Average tons of coal mined per day.	Number of persons employed.	Tons of coal mined per employee.	Number of persons seriously injured.	Number of persons killed.	Tons of coal mined per person injured and killed.	Tons of coal mined per life lost.	Ratio of employees to each person injured and killed.	Total tons of coal mined during 1884.	Number of kegs of powder used for all purposes in the mines.	Number of mules and horses employed.
1. Exeter,	198.15	680.29	373	361.39	2	3	26,960	44,933	71.60	131,800.00	1,413	52
2. Prospect,	189.20	1,092.97	512	403.88	5	3	25,848	68,930	64.00	206,791.11	6,426	53
3. Mineral Spring,	177.45	407.33	224	322.68	2	3	14,156	24,094	44.80	72,282.08	2,500	23
4. Henry,	177.60	595.15	282	374.81	1	2	35,233	52,849	94.00	105,699.13	3,896	45
5. Midvale,	180.50	331.34	245	244.11	4	2	9,968	29,901	41.00	59,808.05	2,166	13
6. Maltby,	168.55	191.14	159	202.63	1	. .	3,221.8	No life lost.	159.00	32,218.18	1,898	14
7. Dorrance,	131.55	89.26	109	107.73	3	. .	3,914	No life lost.	36.33	11,743.01	397	6
Totals Lehigh Valley Coal Company,	181.91	3,426.66	1,904	327.38	18	13	20,107.8	47,949	61.42	623,343.16	21,696	206

LEHIGH AND WILKES-BARRE COAL COMPANY.

8. Diamond,	178.45	625.92	499	223.83	3	1	27,924	111,696	124.75	111,696.00	3,509	48
9. Hollenback,	176.60	904.31	557	290.29	2	1	53,897	161,692	185.66	161,692.00	4,014	38
10. Empire,	178.80	1,027.80	767	239.59	3	1	45,943	183,772	191.75	183,772.00	5,613	45
11. Hartford,	123.25	. .	430	157.16	1	. . .	67,580	No life lost.	430.00	67,580.00	2,340	18
12. Stanton,	160.65	727.05	578	202.07	1	. . .	116,802	No life lost.	578.00	116,802.00	2,875	34
13. Sugar Notch Shaft,	178.05	776.58	534	258.93	4	. . .	31,567	No life lost.	133.50	138,271.00	4,148	43
14. Sugar Notch Slope,	166.50	716.60	629	189.69	6	4	11,931	29,828	62.90	119,315.00	4,485	50
15. Lance, No. 11,	173.35	504.82	369	237.15	3	1	21,878	87,512	92.25	87,512.00	3,018	28
16. Nottingham,	177.55	1,930.09	1,232	278.15	2	4	57,111	85,672	205.33	342,688.00	7,962	84
17. Reynolds,	175.50	758.39	517	257.41	4	2	22,183	66,549	86.16	133,098.00	3,431	48
18. Wanamie,	178.70	762.80	497	274.27	. .	1	136,313	136,313	497.00	136,313.00	5,101	50
19. South Wilkes-Barre,	No breaker.	. . . . .	34	. .	. . .	. . .	No one injured	and no life	lost.	. . . . .	157	2
Totals Lehigh and Wilkes-Barre Coal Co.	178.85	8,938.99	6,643	240.66	29	15	36,335	106,582	150.97	1,598,739.00	46,653	488

DELAWARE AND HUDSON CANAL COMPANY.

20. Mill Creek,	202.25	804.75	389	418.40	. .	1	162,761	162,761	389.00	162,761.13	Not given.	37
21. Pine Ridge,	197.75	602.90	360	331.17	2	. .	59,612	No life lost.	180.00	119,224.18	Not given.	46
22. Laurel Run,	196.00	559.74	352	311.67	3	. .	36,570	No life lost.	117.33	109,710.12	Not given.	46
23. Baltimore Slope,	200.00	377.14	216	349.48	3	2	15,097	37,744	43.20	75,488.01	Not given.	24
24. Baltimore Tunnel,	193.00	630.49	353	344.71	4	1	24,337	121,686	70.60	121,686.01	Not given.	36
25. Conyngham,	209.25	467.84	269	326.75	1	. .	97,897	No life lost.	296.00	97,897.03	Not given.	27
26. No. 2 Plymouth,	188.25	594.39	332	337.03	2	1	37,298	111,895	110.66	111,895.07	Not given.	44
27. No. 3 Plymouth,	198.00	854.15	425	397.93	1	1	84,561	169,123	212.50	169,123.11	Not given.	57
28. No. 4 Plymouth,	174.00	636.16	270	409.97	. .	3	36,897	36,897	90.00	110,693.10	Not given.	34
29. No. 5 Plymouth,	187.75	851.94	383	417.62	4	1	31,990	159,952	76.60	159,952.01	Not given.	58
30. Boston Mines,	188.50	758.03	302	473.14	. .	. .	No one injured	and no life	lost.	142,890.00	Not given.	34
Totals D. and H. Canal Company,	194.06	7,118.01	3,651	378.34	20	10	46,044	138,132	121.86	1,381,322.17	*46,044	443

SUSQUEHANNA COAL COMPANY.

31. Breaker No. 1,	299.65	664.17	437	455.42	44					199,021.15	34,735	50
32. Breaker No. 2,	299.05	1,482.35	1,170	378.88		18	18,531	63,830	41.06	443,298.10		122
33. Breaker No. 5,	296.15	1,710.72	939	539.54						506,630.19		146
34. Graud Tunnel, No. 3,	279.70	537.61	408	368.55	2	4	25,062	37,593	68.00	150,372.14		43
Totals Susquehanna Coal Company,	293.63	4,425.03	2,954	439.85	46	22	19,108	59,060	43.14	1,299,323.18	34,735	361

WYOMING VALLEY COAL COMPANY.

35. Wyoming,	190.00	1,137.35	512	422.06	5	2	30,871	108,049	73.14	216,098.00	Not given.	50
36. Forty Fort,	179.00	547.31	412	237.79	3	1	24,492	97,970	103.00	97,970.00	Not given.	42
37. Harry E.,	177.50	501.20	338	263.20	. . .	1	88,963	88,963	333.00	88,963.00	Not given.	28
Totals Wyoming Valley Coal Co, .	†182.16	2,212.51	1,262	324.11	8	4	33,586	100,757	105.16	403,031.00	*13,435	120

MISCELLANEOUS COAL COMPANIES.

38. Avondale,	181.30	924.78	420	399.19	. .	1	167,663	167,663	420.00	167,663.00	*4,192	58
39. No. 1 Shaft, Kington,	201.00	912.08	399	459.47	2	3	36,665	61,109	79.80	183,329.15	4,900	49
40. No. 2 Shaft, Kingston,	207.00	1,287.15	638	417.61	1	1	88,813	133,220	212.66	266,440.14	7,720	58
No. 3 Shaft, Kingston,					.	1						
41. Gaylord,	193.10	847.15	413	395.88	2	. . .	81,750	No life lost.	206.50	163,500.18	4,946	35
42. Warrior Run,	188.00	364.04	237	290.00	2	.	34,220	No life lost.	118.00	68,440.00	1,520	16
43. Franklin,	193.00	716.37	513	269.51	2	2	34,565	69,130	128.25	138,260.12	3,243¾	40
44. Enterprise,	119.10	726.35	340	254.43	3	1	21,627	86,509	85.00	86,509.00	2,668	30
45. East Boston,	154.30	758.26	255	458.82	2	1	39,000	117,000	85.00	117,000.00	*5,318	25
46. Black Diamond,	162.80	575.12	344	272.18	4	2	15,605	46,815	57.33	93,631.00	4,165	30

TABLE No. 7.—*Continued.*

NAMES OF THE COLLIERIES.	Number of days worked by breaker.	Average tons of coal mined per day.	Number of persons employed.	Tons of coal mined per employee.	Number of persons seriously injured.	Number of persons killed.	Tons of coal mined per person injured and killed.	Tons of coal mined per life lost.	Ratio of employees to each person injured and killed.	Total tons of coal mined during 1884.	Number of kegs of powder used for all purposes in the mines.	Number of mules and horses employed.
47. Dodson,	183.15	732.61	307	437.06	5	1	22,363	134,178	51.16	134,178.00	4,985	38
48. Red Ash, No. 1,	166.00	556.51	315	293.27	. . .	1	92,381	92,381	315.00	92,381.09	3,773	24
49. Red Ash, No. 2,	166.25	628.44	343	304.60	. . .	3	34,826	34,826	114.33	104,478.09	3,547	19
50. Raubville,	180.30	332.77	239	251.04	. . .	. .	No person injur	ed and no life	lost.	60,000.00	1,500	14
51. Bennett,	217.25	339.20	243	303.26	3	1	18,423	73,693	60.75	73,693.16	1,287	16
52. West End,	280.70	481.09	277	487.52	. . .	2	67,522	67,522	138.50	135,044.00	4,216	23
53. East End,	191.15	161.31	144	214.13	. . .	. .	No person injur	ed and no life	lost.	30,836.00	1,213	8
54. Salem,	221.00	194.29	197	217.97	. . .	. .	No person injur	ed and no life	lost.	42,940.10	1,320	24
55. Hillman, H. B.,	185.00	216.21	93	430.10	1	. .	40,000	No life lost.	93.00	40,000.00	1,451	12
56. Clear Spring,	209.75	694.87	342	426.17	4	3	20,821	48,583	48.85	145,750.19	*4,859	40
57. Schooley,	241.50	343.77	230	360.96	. .	2	41,510	41,510	115.00	83,021.00	3,531	24
58. Mallit,	178.85	533.77	324	294.64	1	2	31,822	47,733	108.00	95,466.00	3,664	18
57. Alden,	181.00	835.38	502	301.20	2	1	50,401	151,204	167.33	151,204.00	6,382	40
60. Hillman Vein,	183.00	231.79	194	218.64	1	1	21,219	42,418	97.00	42,418.00	1,400	14
61. Chauncey,	195.00	92.32	78	230.80	. .	. .	No one injured	and no one	killed.	18,003.00	920	8
62. Fuller Colliery,	. . . .	. . . .	33	. . .	3	. . .	. . . . .	No life lost.	. . .	40,629.04	*1,351	3
63. Parrish Colliery,	6.75	208.15	163	8.62	. .	. . .	No one injured	and no one	killed.	1,405.05	66	16
Totals of Miscellaneous Coal Cos., .	†190.81	13,501.51	7,583	339.73	38	29	38,451	88,835	113.17	2,576,224.11	80,100	682

RECAPITULATION.

Lehigh Valley Coal Company,	181.91	3,426.66	1,904	327.38	18	13	20,107.8	47,949	61.42	623,343.16	21,696	206
Lehigh and Wilkes-Barre Coal Company,	178.85	8,938.99	6,643	240.66	29	15	36,335	106,582	150.97	1,598,739.00	46,653	488
Delaware and Hudson Canal Company,	194.06	7,118.01	3,651	378.34	30	10	46,044	138,132	121.86	1,381,322.17	*46,044	443
Susquehanna Coal Company,	293.63	4,425.03	2,954	439.85	46	22	19,108	59,060	43.44	1,299,323.18	31,735	361
Wyoming Valley Coal Company,	182.16	2,212.16	1,262	324.11	8	4	33,586	100,757	105.16	403,031.00	*13,435	120
All Miscellaneous Coal Companies,	190.81	13,501.51	7,583	339.73	38	29	38,451	88,835	113.17	2,576,224.11	80,100	682
New Shafts not producing coal,	. . . .	. . . .	360	. . . .	2	4	. . . . .	. . . . .	. . . .	. . . .	. . . .	. . .
Grand totals,	†203.57	38,718.79	24,357	. . . .	161	97	30,550	81,257	94.41	7,881,985.02	242,963	2,300

* Estimated. † Average.

The fraction in the column giving total tons of coal mined are twentieths of a ton.

The total tons of coal mined include the coal sold at the mines for domestic use, coal shipped to market, and the coal consumed at the collieries for steam purposes, but does not include the culm used for steam purposes at the collieries.

The Fuller colliery passed into the possession of the Delaware and Lackawanna Railroad Company in the latter part of the year, but the latter company did not mine any coal this year.

TABLE No. 8.— *The number of each class of employés at each colliery during the year 1884.*

LEHIGH VALLEY COAL COMPANY.

Names of the Collieries.	Number of Persons Employed Inside.							Number of Persons Employed Outside.							Grand totals inside and outside.
	Bosses.	Miners.	Laborers.	All company men.	Drivers and runners.	Door-boys.	Totals inside.	Bosses.	Mechanics.	Head and plate men.	All company men.	Drivers and runners.	Slate-pickers.	Totals outside.	
1. Exeter,	2	89	70	40	51	15	267	2	14	8	31	7	44	106	373
2. Prospect,	3	112	120	40	69	20	364	2	28	9	39	3	67	148	512
3. Mineral Spring,	1	56	28	18	28	8	139	1	5	9	19	5	46	85	224
4. Henry,	1	65	50	21	43	25	207	1	6	6	35	2	25	75	282
5. Midvale,	2	55	60	8	18	6	149	2	10	2	18	2	62	96	245
6. Maltby,	1	40	30	15	10	4	100	1	3	3	19	3	30	59	159
7. Dorrance,	1	15	20	15	4	3	58	1	7	4	15	2	12	51	109
Totals Lehigh Valley Coal Company,	11	432	378	157	225	81	1,284	10	73	41	176	24	296	620	1,904

LEHIGH AND WILKES-BARRE COAL COMPANY.

8. Diamond,	1	82	83	40	62	33	301	1	18	12	33	7	127	198	499
9. Hollenback,	1	97	122	57	38	29	344	1	18	18	49	6	121	213	557
10. Empire,	1	145	141	67	56	31	444	1	18	33	62	9	200	323	767
11. Hartford,	1	102	68	32	13	14	230	1	18	18	41		122	200	430
12. Stanton,	1	89	146	49	53	33	371	1	29	14	47	3	113	207	578
13. Sugar Notch Shaft,	1	116	112	48	30	21	328	1	17	18	34	9	127	206	534
14. Sugar Notch Slope,	1	143	121	73	31	25	397	1	19	13	47	10	142	232	629
15. Lance, No. 11,	1	95	49	23	12	7	197	1	10	4	32	4	121	172	369
16. Nottingham,	2	242	271	168	81	38	802	1	19	24	62	2	331	430	1,232
17. Reynolds,	1	104	109	38	40	28	320	1	8	10	37	6	135	197	517
18. Wanamie,	1	140	79	59	35	33	347	1	14	12	16	6	91	150	497
19. South Wilkes-Barre,	1	6	12	3	2	2	26		2	4	2			8	34
Totals Lehigh and Wilkes-Barre Coal Company,	13	1,361	1,319	657	463	294	4,107	11	190	190	462	62	1,621	2,536	6,643

TABLE No. 8.—Continued.

DELAWARE AND HUDSON CANAL COMPANY.

NAMES OF THE COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE							NUMBER OF PERSONS EMPLOYED OUTSIDE.							Grand totals inside and outside.
	Bosses.	Miners.	Laborers.	All company men.	Drivers and runners.	Door-boys.	Totals inside.	Bosses.	Mechanics.	Head and plate men.	All company men.	Drivers and runners.	Slate-pickers.	Totals outside.	
20. Mill Creek,	1	77	80	12	54	15	249	1	8	9	33	7	82	140	389
21. Pine Ridge,	1	60	64	40	45	12	122	1	2	9	37	3	86	138	360
22. Laurel Run,	1	65	65	24	44	11	210	1	6	9	32	4	90	142	352
23. Baltimore Slope,	1	30	30	45	19	5	130	1	3	5	28	4	45	86	216
24. Baltimore Tunnel,	1	69	64	26	30	6	196	1	5	6	32	3	110	157	353
25. Conyngham,	1	50	50	40	30	12	183	1	6	8	25	1	45	86	269
26. No. 2, Plymouth,	1	75	70	49	33	9	237	1	. . .	6	39	2	47	95	332
27. No. 3, Plymouth,	1	103	91	39	47	26	367	1	. . .	5	32	4	76	118	425
28. No. 4, Plymouth,	1	65	45	34	30	15	190	1	6	8	17	4	44	80	270
29. No. 5, Plymouth,	1	96	50	57	50	33	287	1	6	12	29	4	44	96	383
30. Boston Mines,	1	64	64	32	22	10	193	1	8	7	46	2	45	109	302
Totals Delaware and Hudson Canal Company,	11	754	673	408	404	154	2,404	11	50	84	350	38	714	1,247	3,651

SUSQUEHANNA COAL COMPANY.

31. Breaker, No. 1,	1	74	140	10	26	15	266	1	15	23	19	7	76	171	437
32. Breaker, No. 2,	3	291	320	54	119	61	848	1	24	31	92	8	166	322	1,170
33. Breaker, No. 5,	2	218	298	41	82	39	680	1	18	19	93	7	121	259	939
34. Grand Tunnel, No. 3,	1	73	94	15	18	9	210	1	11	7	51	4	124	198	408
Totals Susquehanna Coal Company,	7	656	852	120	245	124	2,004	4	68	80	285	26	487	950	2,954

WYOMING VALLEY COAL COMPANY.

35. Wyoming,	1	112	105	55	62	39	374	1	7	9	40	8	73	138	512
36. Forty-Fort,	1	116	75	36	41	14	283	1	8	5	18	7	60	129	412
37. Harry E,	1	55	60	35	19	9	179	1	5	5	61	9	78	159	338
Totals Wyoming Valley Coal Company,	3	283	240	126	122	62	836	3	20	19	149	24	211	426	1,262

MISCELLANEOUS COAL COMPANIES.

	10 MINE INS.														
38. Avondale,	2	102	105	25	48	10	292	1	11	7	19	2	88	128	420
39. No. 1, Kingston,	1	99	92	24	40	18	271	1	.	4	35	3	82	125	399
40. No. 2, Kingston,	2	100	90	6	35	20	253	2	23	20	34	. . .	128	207	688
40. No. 3, Kingston,	1	67	65	14	24	12	178								
41. Gaylord,	1	112	52	39	24	14	242	1	19	14	26	1	110	171	413
42. Warrior Run,	1	71	33	16	11	15	147	1	8	7	26	5	43	90	237
43. Franklin,	3	90	85	54	29	22	283	1	20	17	110	11	71	230	513
44. Enterprise,	2	65	50	51	51	23	242	1	3	6	46	5	37	98	340
45. East Boston,	1	68	55	14	38	12	188	1	5	7	12	2	40	67	255
46. Black Diamond,	1	90	90	21	38	7	247	1	7	7	32	.	60	97	344
47. Dodson,	1	70	65	29	35	14	214	1	5	9	31	3	44	93	307
48. Red Ash, No. 1,	1	110	40	10	20	10	191	1	3	10	50	4	56	124	315
49. Red Ash, No. 2,	1	100	80	7	23	12	223	1	3	14	52	3	47	120	343
50. Raubville,	2	63	60	4	13	2	144	1	5	4	15	5	65	95	239
51. Bennett,	1	54	57	19	26	6	163	1	5	7	14	1	52	80	243
52. West End,	2	76	57	20	19	4	178	1	5	6	36	2	49	99	277
53. East End,	1	32	24	6	9	. .	72	1	2	5	19	. .	45	72	144
54. Salem,	1	54	54	6	9	6	130	2	2	4	14	5	40	67	197
55. Hillman, H. B.,	1	30	10	10	10	3	64	1	2	3	7	4	12	29	93
56. Clear Spring,	1	70	75	38	35	12	231	1	4	6	38	2	60	111	342
57. Schooley,	1	50	45	14	24	6	140	1	3	5	28	3	50	90	230
58. Maffitt,	1	80	70	7	9	9	176	1	13	20	10	6	98	148	324
59. Alden,	1	150	100	45	40	9	345	1	14	19	20	3	100	157	502
60. Hillman Vein,	1	43	45	17	14	8	128	1	5	9	9	2	40	66	194
61. Chauncey,	1	19	17	4	9	2	52	1	3	2	4	1	15	26	78
62. Fuller Colliery,	1	12	. .	14	1	. . .	28	1	4	. . .	. .	.	. .	5	33
63. Parrish Colliery,	1	25	31	21	6	3	87	1	1	7	12	9	46	76	163
Totals miscellaneous coal companies,	34	1,902	1 542	535	640	259	4,912	28	175	219	689	82	1,478	2,671	7,583

RECAPITULATION.

Lehigh Valley Coal Company,	11	432	378	157	225	81	1 284	10	73	41	173	24	296	620	1,904
Lehigh and Wilkes-Barre Coal Company,	13	1,361	1 319	657	463	294	4 107	11	193	190	462	62	1 621	2 536	6,643
Delaware and Hudson Canal Company,	11	754	673	408	404	154	2 404	11	50	81	350	38	714	1 247	3,651
Susquehanna Coal Company,	7	656	852	120	245	124	2 004	4	68	80	285	26	487	950	2,954
Wyoming Valley Coal Company,	3	283	240	126	122	62	836	3	20	19	149	24	211	426	1 262
Miscellaneous coal companies,	34	1,902	1,542	535	640	259	4,912	28	175	219	689	82	1 478	2,671	7,583
Grand totals,	79	5,388	5 004	2 003	2,099	974	15 547	67	576	633	2,111	256	4 807	8,450	23,997

TABLE No. 9.—*Showing number of Days worked by each Breaker at every Colliery, and for each month during 1884.*

LEHIGH VALLEY COAL COMPANY.

NAMES OF THE COLLIERIES.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1. Exeter,	11.90	11.70	12.00	19.95	17.70	12.00	16 00	24.15	16.20	19.25	19.25	18.05	198.15
2. Prospect,	11.90	11.00	12.00	17.90	17.30	11.50	14.80	22 90	16.60	17.90	18 80	16.60	189.20
3. Mineral Spring,	12.50	12 00	12 00	20.00	16.60	11.80	13 90	18.10	14.60	16.20	17.40	12.35	177.45
4. Henry,	11.75	12 00	11.90	19 10	16.45	12.20	15.75	23 00	16.50	16.75	17.10	6.10	177.60
5. Midvale,	11.40	11 00	11.90	19.30	16.30	10.80	14.00	22.90	15.90	15.30	15.20	16.50	180.50
6. Maltby,	8.00	9.65	11.80	12.90	18.65	10.75	12.25	18.95	15 40	17.65	17.60	14.95	168 55
7. Dorrance,	....	.....	.....	.....	.....	11.30	19.60	25.10	13.65	15.35	23.50	23.05	131.55

LEHIGH AND WILKES-BARRE COAL COMPANY.

8. Diamond,	12.95	12.00	12.00	17.80	16.40	11.30	14 30	17.30	13.40	16.20	18.40	16.40	178 45
9. Hollenbach,	11.75	11.00	11.90	18 10	15.25	11.50	14 50	16.60	13.20	17.10	19.10	16.60	176 60
10. Empire,	12.90	12.00	12.00	17.80	16.90	11.25	14.90	16 50	13.40	17.35	18 40	15.40	178.80
11. Jersey,	..	...	...	..	11.70	11.75	16.85	17.90	12.60	15.65	19.15	17.65	123.25
12. Stanton,	11.90	10.40	11.00	7.10	13 00	13.50	15 00	16.40	13.70	19.80	14.30	14.55	160.65
13. Sugar Notch Shaft,	12 00	12.00	12.00	17 70	17.75	9.30	15.40	17.50	13.40	15.90	18 60	16.50	173.05
14. Sugar Notch Slope,	..	11.75	11.50	17.75	16.50	11 75	15.50	18.00	13.50	15.50	18.00	16.75	166 50
15. Lance, No. 11,	12.00	13.10	11.60	15.50	15.50	11.00	14 50	17.00	14.10	15.60	17 00	16.45	173.35
16. Nottingham,	12.75	12 00	11 05	18 40	16.10	11.00	14.40	18.00	14.20	16.40	17 80	15.45	177.55
17. Reynolds,	12.50	12 00	12.00	16.30	16.10	11.60	14 60	17.50	13.70	16 20	17.40	15.60	175 50
18. Wanamie,	12.05	11.70	12.00	17.80	16.60	11.65	15.00	17.85	13 65	16.35	17.15	16.90	178.70

DELAWARE AND HUDSON CANAL COMPANY.

19. Mill Creek,	13.00	12.00	12 00	18.75	17.00	12.00	15 75	25 50	18 00	21.00	18.50	18.75	202 25
20. Pine Ridge,	11.75	12 00	12 00	17 00	16 00	11 75	16.00	24.50	18 00	21 00	19 00	18.75	197.75
21. Laurel Run,	13.50	12.00	12.00	17.00	14.75	12.00	16.00	23 50	17.00	21.00	19.00	18.25	196.00
22. Baltimore Slope,	11.75	12.00	12 00	18 75	16.75	11 00	16.00	25.50	18 00	20 75	19.00	18.50	200 00
23. Baltimore Tunnel,	12.25	12.00	12 00	17 00	14 75	12.00	16.00	24.25	17 00	18.75	18.25	18.75	193.00
24. Conyngham,	17.00	16.75	12 50	19.25	18 00	12 00	16 00	25 50	17.00	19.75	16 75	18.75	209.25
25. No. 2, Plymouth,	11.75	10.75	11.50	16 00	14.75	12 90	15 50	24 50	17.00	18.25	18 25	18.00	188 25
26. No. 3, Plymouth,	13.25	10 75	12.00	15 50	17.75	12.00	16.00	25.75	16.75	20.75	18 75	18.75	198 00
27. No. 4, Plymouth,	10.75	10.75	11 50	16.75	13.25	10.75	14.50	20.75	12.75	17.00	17.50	17.75	174.00
28. No. 5, Plymouth,	11.75	10.00	12 00	16 00	17.25	11 25	15.50	24 25	14 75	19.50	17.00	18 50	187.75
29. Boston Mines,	11.75	10.75	11 50	16.25	15 00	12.00	15.50	24 00	15.00	20.00	18.25	18 50	188.50

SUSQUEHANNA COAL COMPANY.

30. Breaker, No. 1,	23.40	24.25	26 00	26.00	25 50	25.00	25.00	25 00	26.00	27.00	22.50	24.00	299.65
31. Breaker, No. 2,	24 10	23.25	26.50	26 00	25.25	25 00	25 00	25.00	26 00	27 00	22 20	23 75	299.05
32. Breaker, No. 5,	23.40	22.50	24 75	26.00	25 00	25 00	25.00	25.00	26.00	27.00	22.50	23.80	296.15
33. Grand Tunnel, No. 3,	20.10	19.70	22.50	23 90	24.60	23.80	23.70	24 20	25.70	26 90	22.20	22.40	279.70

WYOMING VALLEY COAL COMPANY.

34. Wyoming,	12 70	11.80	11.30	18 60	17.00	11.20	15.20	23.70	10.90	20.00	18.80	18 80	190 00
35. Forty Fort,	12.70	11.90	12.00	18 80	16.50	11 50	15.10	18 10	15.90	18 70	16 30	11.50	179.00
36. Harry E.,	13 75	12.00	12.00	17.60	13.75	11.40	14.20	18.50	15.00	17 05	15.45	16.80	177.50

MISCELLANEOUS COAL COMPANIES.

37. Avondale,	12.60	11.90	12.00	18.00	16.70	12.00	16.00	20 70	16 30	17.40	14.00	13.70	181.30
38. No. 1, Kingston,	16.45	15 00	15.75	17.50	17 45	12.65	16.50	21.95	13.05	17.65	18.85	18.20	201.00
39. No. 2, Kingston,	17 05	14 90	16.35	18.05	17 05	13 30	16.40	24 10	15.35	19 20	18 00	17.25	207.00
40. Gaylord,	16 85	15.90	15.70	18 05	17 55	12 70	16.50	16 10	13 65	18.10	16.95	15.05	193.10
41. Warrior Run,	17.00	7.00	17.00	17.50	16.00	14.50	15 00	21.00	16 00	16.50	18.00	12.50	184 00
42. Franklin,	12.75	10 50	12 00	18.75	17.50	10.50	14 25	22.75	15.75	17.50	19.75	21.00	193 00
43. Enterprise,	12.90	11.70	11.90	18.70	15 60	11.00	14 30	23 00	. .	. .	. .	. .	119 10
44. East Boston,	10 60	12.00	10.00	13.80	13.50	11.00	15 00	14.00	12.00	14.00	15 00	13.40	154.30
45. Black Diamond,	13.30	12 35	11 75	15.55	14.25	11.25	14.05	12.60	12 20	15 90	15.45	14.15	162.80
46. Dodson,	13 00	12.00	12.50	17 60	16.00	11.10	16.00	16 55	14 40	20 35	17.70	15.95	183 15
47. Red Ash, No. 1,	10.15	12.00	11 75	19.45	9 80	11.60	14 70	12.75	13 40	17.85	17.70	14 85	166.00
48. Red Ash, No. 2,	12.10	11.90	11 50	19.30	9.00	11.05	14.85	12.85	13.40	17.95	18.25	14 10	166.25
49. Raubville,	12 80	12.00	12 90	16 00	14.60	11.90	15 50	16 70	13 80	18 60	18.80	16.70	180 30
50. Bennett,	16 00	14 75	15.50	20.00	17.00	14 00	17 00	22 75	20.25	19.25	20.25	20.50	217.25
51. West End,	24.75	19.00	24.90	21 60	19.15	23 00	25 00	25.75	24 10	25 00	23 75	24.70	280 70
52. East End,	. .	.	15.90	21.90	13 00	19.75	18 75	18 50	21 40	22.55	18.75	20.65	191.15
53. Salem,	21 50	19.00	16 00	16 00	16.00	15.00	15.00	22 00	19 00	23 00	16.00	22 50	221.00
54. Hillman, H. B.,	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	185.00
55. Clear Spring,	13 25	13 25	12.75	18.00	19.25	12 75	17.75	24.50	17.25	20.25	20.50	20.25	209.75
56. Schooley,	18.75	21.00	20.00	21.00	23.60	17.00	16 00	24.50	17.50	20.75	20.75	21 25	241.50
57. Maffitt,	10.50	14.80	12 50	17.10	16.25	11.90	15.90	19.40	8 90	17 70	17.90	16.00	178.85
58. Alden,	.	7 07	15.05	19.45	17 15	11 50	15 85	24.30	16 60	18 40	17 65	17.98	184 00
59. Hillman Vein,	16 00	16 00	15.00	16 00	13.00	10.00	12.00	17.00	17 00	16 00	16 00	19.00	183.00
60. Chauncey,	15.00	13.50	15.00	19.00	16 50	14.00	16 50	23.50	9.50	15.00	18 00	19.50	195.00
61. Fuller Colliery.													
62. Parrish Colliery,	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	6 75	6.75

LUZERNE AND CARBON COUNTIES.

EASTERN DISTRICT.

OFFICE OF INSPECTOR OF MINES,
EASTERN DISTRICT OF LUZERNE AND CARBON COUNTIES,
SCRANTON, PA., *April 4, 1885.*

To His Excellency ROBERT E. PATTISON,
Governor of Pennsylvania:

SIR: In compliance with section twenty-two of the act of Assembly approved March 3, A. D. 1870, entitled "An act to provide for the health and safety of persons employed in and about coal mines," I have the honor of herewith submitting my annual report as inspector of coal mines, &c., of the Eastern or Scranton district of Luzerne and Carbon counties, for the year ending December 31, A. D. 1884.

I have endeavored to collect all the information I possibly could, but inasmuch as the law does not provide nor specify at what time operators may give the required statistics necessary for a report of such importance to the mining public, the inspectors are compelled to wait for their will and pleasure. I have failed in several instances to collect the required information.

The mines in this district are in good healthy condition in regards to ventilation and safety, with a very few exceptions. The supervision of the mines is improving yearly, and if it were not for the recklessness and carelessness of the persons employed therein, a great many less accidents would occur. If the wisdom of the Legislature is properly directed to the passage of the bill recommended by the mine commission, it would be the cause of saving many valuable lives, and be the means of preventing many accidents.

I most respectfully refer you to the tabulated report hereto attached, which gives detailed statement of the condition of the several mines in this district for the year 1884:

Table No. 1 gives the name of each person fatally injured, resulting in death, and the nature and cause of accident.

Table No. 2 gives the name of each person seriously injured, not resulting fatally, and the nature and cause of the accident.

Table No. 3 gives the name of each person slightly injured, and the nature and cause of the accident.

Table No. 4 gives the number of persons employed at each colliery, and the number of tons of coal mined, &c.

Table No. 5 gives the name and location of each colliery, and by whom operated, &c.

Table No. 6 gives the mode and condition of ventilation, with amount of air passing through each mine.

Table No. 7 gives the mode of operating each mine, with length of iron tracks inside and outside of mines, nature of roof, local name, and thickness of each seam of coal worked. Also, gives a statement of how each mine operator complies with the requirements of law.

Table No. 8 gives the number of boilers at each colliery, the date of last examination, condition when last examined; also, the number of steam-engines, and the horse-power of each.

	1883.	1884.	Decrease.
Amount of coal shipped, ...	8,345,044 tons.	8,091,216 tons.	
Amount of coal used and sold at mines,	500,702 tons.	485,473 tons.	
Total, ...	8,845,746 tons.	8,576,689 tons.	269,067 tons.

	1883.	1884.	Increase.	Decrease.
Tons of coal produced per life lost, . .	134,027	105,885	. . . . .	28,142
Tons of coal produced for each personal injury, ...	25,419	27,314	1,895	
Ratio of employés per life lost, . .	330	311	. . .	19
Ratio of employés for each personal injury,	63	$80\frac{3}{10}$	$17\frac{3}{10}$	
Tons of coal produced for each employé in mines, ...	596	$504\frac{2}{10}$	. . . . .	$91\frac{8}{10}$
Tons of coal produced for each employé, . .	406	339	. . .	67
Tons of coal produced for each widow, . . .	239,074	313,951	74,877	
Tons of coal produced for each orphan, . .	70,766	89,340	18,574	

It gives me pleasure to acknowledge courtesies received from persons with whom I have had official relations, especially the officers of the large mining companies, who are always willing to comply with the law.

Respectfully submitted.

PATRICK BLEWITT,
Inspector of Mines, &c.

COLLIERY IMPROVEMENTS FOR 1884.

All the improvements mentioned in the report of 1883 have been completed. There have been very few improvements made in the collieries of this district for year 1884, except to the mines and collieries in good running order.

New Butler Shaft.

PITTSTON, *February 16, 1885.*

PATRICK BLEWITT, Esq.,

Inspector of Mines:

DEAR SIR: In continuation of my last report of last year, duly published, would say: Our main shaft is 10′×23′, and two hundred and ninety-five feet deep to Lower or Red Ash vein, which shows seven and a half ($7\frac{1}{2}$) feet of good coal. It is timbered and ready for development when accumulation of water is removed.

Air-shaft is located one hundred and sixty feet south of main shaft, and is 10′×10′, and two hundred and eighty feet deep to vein, showing eight and one half ($8\frac{1}{2}$) feet of good first-class coal. Sinking was done with air drills and dynamite, employing three men per shaft. We drove an average of fifty-six feet per month, and in September and October through very hard rock—seventy feet per month, or nearly a yard per day, a feat probably unequaled, considering all circumstances. Capacity of mines will be five hundred tons of coal per day. We touch four routes of shipment, and have not yet decided which is the most advantageous.

Yours, &c.,

S. B. BENNETT.

SCRANTON, PA., *February 28, 1885.*

PATRICK BLEWITT, Esq.,

Inspector of Mines:

DEAR SIR: The following improvements were made at the colliery of the Bridge Coal Company, (Limited,) during the year 1884: Have sunk shaft 11″×21″ to "Clark vein," a depth of two hundred and eighty-five feet, and second opening completed according to law. Have erected a tower also, eighty feet. The shaft is in operation at present, hoisting about one hundred and seventy cars per day, with safety carriages containing the latest improvements. Also, a trestle, two hundred and twenty-five feet in length, has been erected across the Lackawanna river and the Delaware and Hudson railroad, the east end of which will be used for culm dump.

Respectfully submitted.

A. B. STEVENS,
Superintendent.

Delaware, Lackawanna and Western Railroad Company.

Improvements made during 1884: Tripp shaft completed to Clark vein. New fan there, 14′×4′; also, second opening, now sinking, nearly completed, sunk from G vein, re-opened or enlarged from 12′×12′ to 12′×24′ to Clark vein. Intention is to put another fan here, 14′×4′. Bellevue shaft completed so as to hoist the coal direct up the breaker tower, and abandoned the trestling now between the old shaft and breaker.

Respectfully yours,

B. Hughes.

TABLE NO. 1.—*List of accidents resulting in death reported to the Inspector of now including all of Lackawanna and a portion of Wayne and Susquehanna coun year ending 31st day of December, A. D. 1884.*

DATE.	No. killed.	Names.	Age.	Colliery where Accident Occurred.	Nationality.
Jan. 4	1	Archie McCarren,	40	Tompkins Shaft, A. Tompkins, Pittston bor.,	Scotch-Irish
4	2	Thomas Wallace,	18	Hillside Shaft, H. C. & I. Co., Pleasant Valley borough.	American, .
10	3	Michael O'Hara,	32	Twin Shaft, P. C. Co., Pittston borough, . . .	Irish, . .
22	4	Owen Malloy, . .	40	Green Ridge Slope, O. S. J. & Co., Dunmore bor.,	Irish, . . .
22	5	Aaron Bellis, . .	50	Green Ridge Slope, O. S. J. & Co., Dunmore bor.,	English, . .
29	6	Chris. Schramski,	25	Green Ridge Slope, O. S. J. & Co., Dunmore bor.,	Polish, .
30	7	James Reap, . .	16	Hillside Shaft, A. C. & I. Co., Pleasant Valley borough.	American, .
Feb. 4	8	James Young, . .	69	Marvine Shaft, D. & H. C. Co., First ward, Scranton.	English, . .
6	9	Charles Owens, .	49	Central Shaft, D. L. & W., Fifteenth ward, Scranton.	Welsh, . .
20	10	Marion W. Saxe,	22	Amity Breaker, A. C. Co., Lackawanna twp., .	American, .
21	11	James Jones, . .	40	Amity Shaft, A. C. Co., Lackawanna township,	Welsh, . .
Mch. 10	12	Edward Brennan,	12	Powderly Slope, D. & H. C. Co., Carbondale City,	American, .
26	13	Pat. Leyden, jr.,	26	Sibley Mines, P. A. C. Co., Old Forge twp., . .	Irish, . . .
27	14	Evan Noggles, .	21	Oliphant No. 2, D. & H. C. Co., Oliphant bor.,	Welsh, . .
April 3	15	John Gownly, . .	15	Slope No. 4, Penna. C. Co., Jenkins township,	American, .
8	16	Elias Edwards, .	41	Dodge Shaft, D. L. & W.., Lackawanna twp., .	Welsh, . .
9	17	P. F. Donnelly, .	12	Jermyn No. 4, J. Jermyn, Dickson City bor., .	American, .
21	18	James Kevlin, .	18	Greenwood Mines, P. A. C. Co., Lackawanna township.	American, .
28	19	August Swanson,	45	Jermyn No. 2, D. & H. C. Co., Jermyn bor., .	Swedish, .
May 1	20	James Malla, . .	45	No. 12 Shaft, Penna. C. Co., Pleasant Valley borough.	Irish, . . .
9	21	Pat. Gallagher, .	25	No. 5 Shaft, Penna. C. Co., Dunmore borough,	Irish, . . .
22	22	John McNeeley, .	18	Capouse Shaft, L. I. & C. Co., Twenty-first word, Scranton.	Irish, . .
28	23	Patrick Fox, .	40	Powderly Slope, D. & H. C. Co., Carbondale City,	Irish, . . .
30	24	Thomas Higgins,	48	Bellevue Slope, D. L. & W., Lackawanna twp.,	Irish, . . .
30	25	Patrick Fee, . .	13	No. 1 Shaft, D. & H. C. Co., Carbondale City,	American, .
31	26	Michael Daley, .	22	Barnum Mines, Penna. C. C., Marcy township,	American, .
June 2	27	Michael Barrett,	25	Shaft No. 8, Penna. C. Co., Hughestown bor., .	Irish, . . .
23	28	Patrick Jordan, .	23	Mount Pleasant, W. T. S., Fourteenth ward, Scranton.	Irish, . . .
28	29	William Hughes,	15	Continental Shaft, D. L. & W., Lackawanna twp.,	Welsh, . .
28	30	Patrick Walsh, .	20	Lackawanna C. Co. Mines, Blakely borough, . .	Irish, . .
July 4	31	Owen McDonald,	23	Jermyn No. 4, J. J., Dickson City borough, . .	American, .
8	32	Daniel Hopkins,	11	Sloan Breaker, D. L. & W., Lackawanna twp.,	Welsh, . .
10	33	John M. Sullivan,	28	Mount Pleasant Mine, W. T. S., Fourteenth ward, Scranton.	American, .
16	34	James Edwards, .	40	Fair Lawn Slope, F. L. C. Co., Seventh ward, Scranton.	Welsh, . .
22	35	Andros Nowalk,	21	Dodge Mines, D. L. & W., Lackawanna twp.,	Hungarian,
24	36	John B. Davis, .	52	Taylor Mines, D. L. & W., Lackawanna twp. .	Welsh, . .
28	37	William Davis, .	25	Spring Brook mines, W. E. C., Lackawanna twp.,	American, .
Aug. 2	38	Mike Von Bergen,	65	Amity Breaker, A. C. Co., Lackawanna twp., .	German, .
4	39	Mike Dougherty,	17	Dodge Mines, D. L. & W. R. R. Co., Lackawanna township.	American, .
5	40	William Hollow,	40	Gypsy Grove Mines, Penna. C. Co., Dunmore borough.	English, . .
5	41	John Horan, . .	25	Cayuga Mines, D. L. & W., Third ward, Scranton.	Irish, . . .
6	42	Pat. Coyne, 5th,	48	Greenwood Mines, P. A. C. Co., Lackawanna township.	Irish, . . .
6	43	William McHale,	31	Pierce Mines, J. S. & Co., Archbald borough, .	American, .
6	44	Peter Stowe, . .	49	Mount Pleasant Mines, W. T. S., Fourteenth ward, Scranton.	German, .
9	45	Edward Smith, .	12	Dodge Breaker, D. L. & W., Lackawanna twp.,	American, .

the Eastern District of the Wyoming Coal Fields, Luzerne and Carbon counties, ties, State of Pennsylvania, and the causes as shown by his investigations, for the

Occupation.	Killed.	Widows.	Orphans.	Nature or Cause of Death.	No. killed.
Miner,	Died,			Seriously injured; fall of coal; died same day,	1
Laborer,	Died,			Seriously injured; shot by a blast through pillar; died four hours after,	2
Laborer,	Killed,			Killed; fall of roof,	3
Laborer,	Killed,			Both these men killed; fired a blast which discharged some props. They were in the act of re-standing them, when the roof fell, killing them,	4
Miner,	Killed,	1			5
Laborer,	Killed,			Killed; was coming up slope; got hit by a runaway car,	6
Driver,	Died,			Leg fractured; caught under hoisting carriage in shaft; died two days after,	7
Laborer,	Died,			Seriously injured; squeezed between car and door; died next day,	8
Miner,	Killed,	1	8	Killed; fall of rock roof,	9
Carpenter,	Died,			Seriously injured; fell about seventy feet off new breaker; died next day,	10
Sinker,	Killed,	*		Killed; hoisting bucket fell from surface to bottom, killing him instantly,	11
Door-boy,	Killed,			Killed; caught between loaded car and pillar,	12
Miner,	Killed,	1	2	Killed; was undermining; a slip in coal caused a fall, killing him,	13
Laborer,	Killed,			Killed; fall of coal,	14
Driver,	Died,			Seriously injured; caught between cars; died seven o'clock same night,	15
Miner,	Killed,	1	6	Killed instantly; fall of bony coal,	16
Door-boy,	Killed,			Killed; caught in mud screens,	17
Driver,	Killed,			Killed; fell off loaded coal train between mines and breaker,	18
Laborer,	Killed,			Killed; fall of top coal,	19
Miner,	Killed,	1	4	Killed; fall of coal,	20
Laborer,	Died,			Seriously injured; fell down shaft, from Dunmore vein to No. 2 vein, a distance of forty feet; died two days after,	21
Laborer,	Killed,			Killed instantly; fall of rock roof,	22
Miner,	Killed,	1	6	Killed; fall of top coal,	23
Laborer,	Killed,	1		Killed; fall of roof,	24
Driver,	Killed,			Killed; dragged to death by a mule outside in barn-yard,	25
Laborer,	Killed,			Killed; hit on head by a piece of Black rock,	26
Laborer,	Killed,			Killed; head caught between two mine cars,	27
Laborer,	Killed,			Killed instantly; fall of roof,	28
Driver,	Died,			Seriously injured; caught between car and rib; died on way home,	29
Footman,	Died,			Seriously injured; caught between car and rib; died same night,	30
Laborer,	Died,			Seriously injured; fall of roof; died same night,	31
Slate-picker,	Killed,			Killed; caught by screen and dragged under it; no person saw him at the time,	32
Miner,	Killed,			Killed; fall of top coal while in the act of re-standing a prop,	33
Miner,	Killed,	1	4	Killed while in the act of re-lighting the squib which he thought had missed fire,	34
Laborer,	Died,	1	1	Seriously injured; fall of roof hit him on back and leg; died same night,	35
Miner,	Killed,			Killed fall of top coal,	36
Miner,	Killed,	1	3	Killed; fall of middle rock,	37
Carpenter,	Died,			Seriously injured; a hatchet fell from timbers of breaker frame and entered his brain; died same night,	38
Drivers' helper,	Killed,			Killed; was riding on front bumper of car; fell in front, and the cars passed over him,	39
Miner,	Died,	1	2	Seriously injured; fall of rock roof; died same night,	40
Miner,	Killed,	1	2	Killed; fall of top coal,	41
Miner,	Died,	1	10	Seriously injured; fall of roof; died four o'clock next morning,	42
Miner,	Killed,	1	2	Killed instantly; fall of top coal,	43
Laborer,	Died,			Leg fractured, and both legs paralized below the hips; fall of roof; died in hospital a few days after the accident,	44
Slate-picker,	Died,			Seriously injured; fell between screen and frame in breaker while playing with Paddy Hoban; died same night,	45

* Family in Wales.

TABLE No. 1.—

DATE.	No. killed.	Names.	Age.	Colliery where Accident Occurred.	Nationality.
Aug. 11	46	Daniel Maek, . .	16	Grassey Island Coal Co.'s Mines, Winton bor.,	American,
12	47	Joseph Evon, . .	25	Brisbin Mines, D. L. & W., Third ward, Scranton,	Bohemian,
13	48	John Connelly, .	23	Erie Breaker, H. C. & I. Co., Glenwood bor., .	Irish, . . .
13	49	Pat'ck McAlister,	22	Green Ridge Mines, O. S. J., Dunmore borough,	Irish, . . .
16	50	Patrick Finn, . .	40	Central Mines, D. L. & W., Fifteenth ward, Scranton.	Irish, . . .
23	51	John Knott, .	22	Bridge Mines, B. C. Co., Fourteenth ward, Scranton.	Polish, . .
25	52	John McCool, . .	12	Lucas Breaker, L. C. Co., Second ward, Scranton.	American,
27	53	Patrick Connors,	15	Green Ridge Mines, O. S. J., Dunmore borough,	American,
Sept. 9	54	Martin Durkin, .	50	Winton Slope, Jones & Shutleff, Winton bor., .	Irish, . . .
10	55	Benjamin Jones,	30	Lackawanna C. Co. Mines. Blakely borough, .	Welsh, . .
13	56	James Salter, . .	. .	Shaft No. 14, Penna. C. Co., Jenkins township,	Irish, . . .
16	57	Joseph Halla, . .	22	White Oak Slope, D. & H., Archbald borough,	Bohemian,
16	58	Phillip Gallitz, .	38	National Mines, W. C. & Co., Twentieth ward, Scranton.	German, .
18	59	Thomas Flynn, .	22	Gypsey Grove Mines, Penna. C. Co., Dunmore borough.	American,
Oct. 7	60	John Joyce, 2d.,	45	Greenwood Mines, P. A. C. Co., Lackawanna township.	Irish, . . .
8	61	John Evans, . .	12	Brisbin Breaker, D. L. & W., Third ward, Scranton.	American,
9	62	John Farrel, . .	27	Shaft No. 10, Penna. C. Co., Hughestown bor.,	Irish, . . .
10	63	T. Shaughnessy,	20	Fairmount Mines, F. C. Co., Pittston twp.,	Irish, . . .
14	64	John Lottus, . .	19	Shaft No. 2, Penna. C. Co., Dunmore borough,	Irish, . . .
14	65	James Thomas, .	14	Von Storch Mines, D. & H., Second ward, Scranton.	Welsh, . .
15	66	T. J. Henderson,	40	Jermyn No. 4, J. J., Dickson City borough, . .	English, . .
17	67	Patrick Mackin, .	42	Archbald Mines, D. L. & W., Lackawanna twp.,	Irish, . . .
25	68	Joseph Williams,	17	Scranton C. Co. Mines, D. L. & W., Lackawanna township.	Welsh, . .
25	69	Peter Morton, . .	20	Stark Mines, Penna. Coal Co., Lackawanna township.	Scotch, . .
28	70	Wm. Reynolds, .	24	Green Ridge Mines, O. S. J., Dunmore borough,	Irish, . . .
29	71	Thomas Parry, .	30	Leggett's Creek Mines, D. & H., First ward, Scranton.	Welsh, . .
Nov. 11	72	William Davis, .	27	Brisbin Mines, D. L. & W. R. R. Co., Third ward, Scranton.	Welsh, . .
18	73	Joseph Peneaut,	42	Forest City Mines, H. C. & I. Co., Clifford township, Susquehanna county.	French, . .
20	74	John McDonough	57	White Bridge Tunnel, D. & H., Carbondale city,	English, .
22	75	Thos. R. Thomas,	20	Central Mines, D. L. & W., Fifth ward, Scranton.	Welsh, . .
29	76	William Carter, .	43	Fairmount Mines, F. C. Co., Pittston township,	English, .
Dec. 9	77	Thomas Mullen, .	54	Cayuga Mines, D. L. & W., Third ward, Scranton.	Irish, . . .
13	78	Peter Gibbons, .	15	Shaft No. 8, Penna. C. Co., Hughestown bor.,	American.
19	79	John Mullen, . .	42	Manville Mines, D. L. & W. and D. & H., Thirteenth ward, Scranton.	Irish, . . .
22	80	Patrick Egan, . .	59	Barnum Mines, Penna. C. Co., Marcy twp., .	Irish, . . .
30	81	Thos. Robinson,	17	Shaft No. 6, Penna. C. Co., Jenkins township,	American,

NOTE.—There were 81 deaths in year 1884.
There were 27 widows in year 1884.
There were 96 orphans in year 1884.
There were 105,885 tons of coal mined for each death.
There were 313,951 tons of coal mined for each widow.
There were 89,340 tons of coal mined for each orphan.

Continued.

Occupation.	Killed.	Widows.	Orphans.	Nature or Cause of Death.	No. killed.
Driver,	Killed,			Killed; caught between loaded cars in mines while in the act of trying to start them,	46
Laborer,	Died,			Seriously injured; fall of roof; died same night,	47
Outside loader,	Killed,			Killed; foot caught between two rails, wide and narrow guage; run over by large railroad cars under chutes,	48
Laborer,	Killed,			Killed; premature blast. He undertook to fire a shot, although he worked in the mines only a few days,	49
Miner,	Killed,	1	3	Killed; fall of roof; was pulling back top coal when a piece of roof fell on him,	50
Laborer,	Killed,			Killed; fall of roof,	51
Slate-picker,	Killed,			Killed; head almost taken off; hit by hoisting-carriage in shaft-tower,	52
Driver,	Died,			Seriously injured. He ran car against head-block; it jumped the track and caught him. He died same night,	53
Miner,	Killed,	1	7	Killed; fall of roof,	54
Miner,	Died,			Seriously injured; fall of roof; died two hours after,	55
Rockman,	Killed,	1		Killed; brake on drum broke, which caused the bucket to descent rapidly, striking and killing him,	56
Laborer,	Killed,			Killed; fall of six-inch top coal,	57
Miner,	Died,	1	6	Seriously injured; premature explosion of cartridge before he got away from the hole,	58
Miner,	Killed,			Killed; fall of roof,	59
Miner,	Killed,	1	6	Killed; fall of roof. Wife and family in Ireland.	60
Slate-picker,	Killed,			Killed; pulled into pony-rolls' cog-wheels,	61
Laborer,	Killed,			Killed; fall of coal from rib on side of gangway,	62
Laborer,	Died,			Seriously injured; fall of coal; died two days after,	63
Laborer,	Died,			Seriously injured; tried to get on loaded trip of cars on slope, got knocked under trip; died same night,	64
Drivers' helper,	Died,			Seriously injured; fell under trip of light cars, which passed over him; died thirty-six hours after,	65
Miner,	Died,	1		Seriously injured; fall of top coal and roof; died two hours after,	66
Miner,	Killed,	1	7	Killed; fall of roof,	67
Driver,	Died,			Leg fractured, afterwards amputated; knocked down; empty mine cars ran over him; died thirty hours after,	68
Laborer,	Died,			Seriously injured internally; fall of top coal; died about forty-eight hours after,	69
Miner,	Killed,			Killed instantly; run over by a trip of loaded cars on plane in mines,	70
Miner,	Died,	1		Seriously injured; shot missed fire. He was drilling out the hole again when it exploded; died November 8,	71
Miner,	Killed,	1	1	Killed; fall of rock roof,	72
Miner,	Killed,			Killed; went back to face of chamber before his blast went off,	73
Miner,	Died,	1	5	Seriously injured; fall of top coal; died four hours after,	74
Driver,	Died,			Seriously injured; kicked in bowels by a mule; died five days after,	75
Miner,	Killed,	1	1	Killed instantly; fall of top coal,	76
Miner,	Killed,	1	4	Killed; fall of top coal,	77
Driver,	Killed,			Killed; caught between two loaded cars,	78
Miner,	Died,	1	6	Seriously injured; fall of roof; died two days after,	79
Company man,	Killed,			Killed; explosion of gas,	80
Driver,	Killed,			Killed; mine car rolled over and caught him under it; jammed his head,	81

Note.—There were 21 deaths caused by falls of coal, equal to, ... 25.92 per cent.
There were 22 deaths caused by falls of roof, equal to, ... 27.16 "
There were 16 deaths caused by being crushed by mine cars, equal to, ... 19.75 "
There were 6 deaths caused by premature explosion of blast, equal to, ... 7.41 "
There were 4 deaths caused by being caught in machinery, equal to, . . . 4.94 "
There were 2 deaths caused by being caught by hoisting carriage, equal to, . 2.47 "
There were 2 deaths caused by being hit by hoisting-bucket in new shafts, equal to 2.47 "
There was 1 death caused by an explosion of fire-damp, equal to, ... 1.23 "
There was 1 death caused by falling down a shaft, equal to, ... 1.24 "
There was 1 death caused by falling off new breaker, equal to, ... 1.23 "
There was 1 death caused by a hatchet falling on his head entering skull, equal to 1.24 "
There was 1 death caused by being dragged by a mule in barn-yard, equal to, . 1.23 "
There was 1 death caused by being kicked by a mule, equal to, ... 1.24 "
There were 2 deaths caused by being crushed by cars outside, equal to, ... 2.47 "

100.00

TABLE No. 2.—*List of serious and non-fatal accidents reported to the Inspector of mining including all of Lackawanna and a portion of Wayne and Susquehanna coun ending 31st day of December, A. D. 1884.*

DATE.	No. injured	Names.	Age.	Colliery where Accident Occurred.	Nationality.
Jan. 14	1	Morgan Sweeney,	50	Von Storch Mines, D. & H. C. Co., Second ward, Scranton.	Irish,
17	2	Stanley Blanchard,	17	No. 14 Shaft, Penna. C. Co., Jenkins township.	American,
26	3	John McLane,	21	Storr's Shaft, D. L. & W., Dickson City borough,	Irish,
29	4	Michael Nealon,	15	Eddy Creek Shaft, D. & H. C. Co., Olyphant bor.,	American,
31	5	Edgar Williams,	40	Lackawanna C. Co. Shaft, Blakely borough.	English,
Feb. 8	6	George Ray,	40	No. 2 Shaft, Penna. C. Co., Pittston borough.	English,
13	7	Charles Ready,		Lucas Shaft, L. C. Co., Second ward, Scranton.	Irish,
27	8	John Esles,	50	National Mines, W. C. & Co., Twentieth ward, Scranton.	Welsh,
Mar. 11	9	Thomas Ryan,	24	Dodge Shaft, D. L. & W., Lackawanna township,	Irish,
14	10	Patrick Cawley,	16	No. 10 Shatt, Penna. C. Co., Hughestown bor.,	American,
19	11	T. W. Williams,	16	Hyde Park Shaft, D. L. & W., Fifth ward, Scranton.	American,
19	12	William Winn,	18	No. 5 Shaft, Penna. C. Co., Jenkins township.	American,
19	13	James Leslie,	21	Jermyn, No. 2, D. & H. C. Co., Jermyn borough,	American,
24	14	M. Spud,	61	Brisbin Shaft, D. L. & W., Third ward, Scranton,	German,
25	15	Edward Hatton,	40	Leggett's Creek Shaft, D. & H. C. Co., First ward, Scranton.	Irish,
25	16	David Reese,	18	Von Storch Mines, D. & H. C. Co., Second ward, Scranton.	Welsh,
25	17	William Judge,		Beaver Mines, Pittston borough.	Irish,
27	18	William Toole,	16	Greenwood Mines, P. A. C. Co., Lackawanna township.	American,
31	19	Albert Griffiths,	14	Ontario Breaker, L. V. C. Co., Pleasant Valley borough.	Welsh,
April 3	20	Edward S. Jones,	45	Bellevue Shaft, D. L. & W., Lackawanna twp.,	Welsh,
4	21	John Hailey,	50	Stetler Shaft, S. N. S. & Co., Marcy township,	Irish,
22	22	Martin Duffy,	14	Dodge Shaft, D. L. & W., Lackawanna township,	American,
23	23	Capra Ambetsue,	23	Erie Breaker, H. C. & I Co., Greenwood borough,	Hungarian,
25	24	John Connors,	17	Tripp Slope, D. L. & W., Twenty-first ward, Scranton.	Irish,
25	25	Patrick Conway,		Lucas Shaft, L. C. Co., Second ward, Scranton,	Irish,
29	26	Michael E. Riley,	10	Meadow Brook Breaker, W. C. & Co., Twentieth ward, Scranton.	American,
May 2	27	John Clisham,	16	Everhart Mines, Allen & Pool, Jenkins township,	English,
12	28	Andrew Yarro,	30	Stetler's Mines, S. & Co., Marcy township,	Hungarian,
15	29	James Helffer,	26	Archbald Mines, D. L. & W., Lackawanna twp.,	English,
26	30	Henry Spragler,	45	Meadow Brook Shaft, W. C. & Co., Twentieth ward, Scranton.	German,
June 1	31	David J. Thomas,	13	Hampton Mines, D. L. & W., Lackawanna twp.,	Welsh,
9	32	Frantz Shuman,	50	Stetler Shaft, S. N. Stetler & Co., Marcy twp.,	German,
9	33	Thomas Mackin,	15	Barnum Mines, Penna. C. Co., Marcy township,	American,
10	34	Henry McGinley,	27	Stetler Shaft, S. N. S. & Co., Marcy township,	Irish,
10	35	Jos. Duncannon,	25	Stetler Shaft, S. N. S. & Co., Marcy township,	Irish,
27	36	John Marsden,	35	Pancoast Mines, P. C. Co., Dickson City borough,	English,
27	37	Robert Black,	24	Pancoast Mines, P. C. Co., Dickson City borough,	American,
27	38	Michael Malia,		Grassy Island Shaft, D. & H. C. Co., Olyphant bor.	American,
July 7	39	Michael Judge,	15	Bellevue Slope, D. L. & W., Lackawanna twp.,	American,
9	40	Joseph Tsatco,	45	Mt. Pleasant Breaker, W. T. S., Fourteenth ward, Scranton.	Hungarian,
10	41	Thomas Jenkins,	40	Sloan Shaft, D. L. & W., Lackawanna township,	Welsh,
11	42	Thomas Linnen,	14	Shaft No. 9, Penna. C. Co., Pittston borough,	American,
12	43	Bartley Walsh,	50	Capouse Shaft, L. I. & C. Co., Fourteenth ward, Scranton.	Irish,
12	44	John Howley,	39	Tunnel No. 1, Penna. C. Co., Pittston township,	Irish,
12	45	Patrick Ruane,	39	Tunnel No. 1, Penna. C. Co., Pittston township,	Irish,
15	46	James Rodgers,	35	Florence Shaft, C. P. M. & Co., Pittston twp.,	English,
23	47	John Kispillipsy,	35	Eddy Creek Shaft, D. & H., Olyphant borough,	Polish,
25	48	Neal Sturgeon,	16	Shaft No. 12, Penna. C. Co., Pleasant Valley bor.,	American,
29	49	William T. Reese,	48	Cayuga Shaft, D. L. & W., Third ward, Scranton,	Welsh,
Aug. 1	50	Fred. Schmaltz,	53	Shaft No. 8, Penna. C. Co., Hughestown bor.,	German,
2	51	Mike Labschaensky	27	Dodge Mines, D. L. & W., Lackawanna twp.,	Polish,
4	52	Thomas Strobeck,	23	Mosier Mines, B. C. Co., Hughestown borough,	German,
6	53	John Norton,	30	Bellevue Mines, D. L. & W., Lackawanna twp.,	American,
14	54	John McDonnell,	14	Barnum Breaker, Penna. C. Co., Marcy township,	American,
14	55	Joseph Prichard,	11	Jermyn, No. 1, D. & H. C. Co., Jermyn borough,	Welsh,
16	56	William Eden,	34	Pancoast Mines, P. C. Co., Dickson City bor.,	English,
19	57	Edward Saunders,	17	Marvine Mines, D. & H., First ward, Scranton,	American,
19	58	William Edwards,	17	Brisbin Mines, D. L. & W., Third ward, Scranton,	Welsh,
20	59	Patrick Connelly,		Marvine Breaker, D. & H., First ward, Scranton,	American,

the Eastern District of the Wyoming Coal Fields, Luzerne and Carbon counties, ties, State of Pennsylvania, and the cause as shown by his investigations, for the year

Occupation.	Nature of Accident.	No. injured.
Miner,	Right leg fractured; slipped on coal; fell, breaking his leg,	1
Dumpman,	Leg fractured; caught between body and bumper of dump car,	2
Pumpman,	Seriously injured; fell down shaft a distance of forty-two feet,	3
Driver,	Right arm fractured; hit by mule's fore foot,	4
Pumpman,	Seriously injured; caught by hoisting carriage in shaft,	5
Miner,	Severely injured on body; trip of cars run over him,	6
Miner,	Collar-bone and two ribs fractured; fall of roof,	7
Miner,	Left leg fractured; fall of top coal,	8
Laborer,	Leg fractured below the knee; fall of coal,	9
Pin-boy,	Left arm fractured between elbow and wrist; caught between two cars,	10
Driver,	Leg fractured at ankle joint; caught between car and pillar,	11
Laborer,	Leg fractured between knee and ankle; coal rolled on it, breaking it,	12
Wheelman,	Three ribs fractured and internally injured; kicked by a mule,	13
Laborer,	Compound fracture of leg; fall of rock,	14
Miner,	Leg fractured; fall of top coal,	15
Runner,	Leg fractured; lost his light and fell under trip of cars,	16
Miner,	Collar-bone fractured; hit by coal from blast,	17
Fan-turner,	Collar-bone fractured; run-away of trip of cars on slope,	18
Driver,	Eye badly injured; kicked by a mule,	19
Miner,	Leg fractured; fall of boney coal,	20
Laborer,	Leg fractured; fall of rock,	21
Driver,	Seriously injured; caught between car and rib,	22
Slate-picker,	Leg crushed in pony rolls; afterwards amputated; was standing in chute to pony rolls, and slipped in,	23
Driver,	Right leg and shoulder-blade fractured by car jumping track and caught him between car and pillar,	24
Laborer,	Forehead badly injured; fall of roof,	25
Slate-picker,	Arm fractured; fell off hand-rail of steps outside screen-room while sliding down same; he was playing at the time,	26
Laborer,	Leg fractured; fall of rock; not considered serious,	27
Laborer,	Left leg fractured below knee; caught between body and frame of culm car,	28
Miner,	Seriously injured on head and hip; fall of blacksmith coal,	29
Miner,	Injured about hips; fall of top boney coal,	30
Door-boy,	Leg fractured; fall of roof,	31
Laborer,	Seriously injured; fall of roof,	32
Door-boy,	Seriously injured; skull crushed in; caught between two cars in mines,	33
Miner,	(Both these men were seriously injured by coal flying from blast which was fired)	34
Laborer,	) in the pillar between the two chambers and broke through into their chamber, (	35
Miner,	(These two men fired a blast and went into a cross entrance for safety; while there)	36
Laborer,	) a fall of rock came on them, injuring them severely, (	37
Driver,	Arm fractured; fell under loaded car in mines,	38
Driver helper,	Arm cut off; caught under wheel of car in mines,	39
Laborer,	Leg fractured; fell off timber in breaker,	40
Miner,	Arm fractured; fall of roof,	41
Driver,	Leg fractured; caught between car and prop,	42
Miner,	Seriously injured; fall of coal,	43
Miner,	Rib fractured; fall of roof,	44
Laborer,	Injured internally by same fall,	45
Laborer,	Arm fractured; hit by piece of coal from blast,	46
Miner,	Seriously injured; squeezed between car and pillar,	47
Driver,	Seriously injured; mule stepped on his spine,	48
Miner,	Shoulder-blade fractured; lit a match, he thought it missed; went off as he got back,	49
Miner,	Left leg fractured; fall of top coal,	50
Laborer,	Seriously injured; fall of roof,	51
Miner,	Leg fractured; fall of top coal,	52
Laborer,	Leg fractured between ankle and knee; caught by cars jumping the track,	53
Driver,	Leg fractured; pants caught in culm car while jumping off same,	54
Slate-boy,	Foot mashed; caught in pony rolls of breaker,	55
Miner,	Left leg fractured; fall of top coal,	56
Laborer,	Arm fractured between elbow and wrist; fall of coal,	57
Driver,	Thigh fractured; slipped and fell under loaded cars in mines,	58
Laborer,	Leg fractured; unloading props from car when they started and rolled on his leg,	59

TABLE No. 2—

DATE.	No. Injured.	Names.	Age.	Colliery where Accident Occurred.	Nationality.
Aug. 23	60	Martin Kelly,	36	Shaft No. 5, Penna. Coal Co., Jenkins township,	Irish,
25	61	John DeSilva,	25	Ontario Breaker, L. V. C. Co., Pleasant Valley borough.	Italian,
26	62	Julius Knopp,	33	Mocier Mines, B. C. Co., Hughestown borough,	German,
28	63	Patrick Gallagher,	13	No. 2, Diamond Breaker, D. L. & W., Twenty-first ward, Scranton.	American,
30	64	Miles Monahan,	57	Coal Brook Mines, D. & H. C. Co., Carbondale City.	Irish,
30	65	Martin Haberman,	33	Stetler Mines, S. N. S. & Co., Marcy township,	German,
Sept. 4	66	Michael Loftus,		Eddy Creek Mines, D. & H., Olyphant borough,	American,
9	67	Edward McDonel,	15	Barnum Shaft, Penna. C. Co., Marcy township,	American,
12	68	Matthew Coyle,	28	Lucas Mines, L. C. Co., Second ward, Scranton,	Irish,
16	69	John Sladek,	21	Stetler Mines, S. N. S. & Co., Marcy township,	German,
17	70	John Laville,	36	Taylor Mines, D. L. & W., Lackawanna twp.,	Irish,
27	71	Noah Gordon,	63	Heidelberg Mines, L. V. C. Co., Pittston twp.,	American,
Oct. 18	72	Geo. Spanchard,	39	Eddy Creek Mines, D. & H., Olyphant borough,	American,
22	73	George Cooper,	36	Jermyn, No. 4, J. J., Dickson City borough,	English,
22	74	Thomas Ryan,	24	Archbald Mines, D. L. & W., Lackawanna twp.,	Irish,
27	75	Mike Shill,	18	Pyne Mines, D. L. & W., Lackawanna township,	German,
29	76	Thomas Griffiths,	43	Leggett's Creek Mines, D. & H., First ward, Scranton.	Welsh,
29	77	John McHale,	17	Pierce Mines, P. C. Co., Archbald borough,	Irish,
Nov. 8	78	John Mullanny,	25	Grassy Island Mines, D. & H., Olyphant borough,	Irish,
8	79	Charles Hoban,	13	Grassy Island Mines, D. & H., Olyphant borough,	American,
10	80	Michael Corcoran,	40	Shaft No. 4, Penna. C. Co., Pittston borough,	Irish,
14	81	Patrick Berry,	15	Leggett's Creek Mines, D. & H., First ward Scranton.	Irish,
15	82	Jacob Robins,	13	Pyne Mines, D. L. & W., Lackawanna township,	Welsh,
15	83	Martin Kane,	24	Shaft No. 9, Penna. C. Co., Pittston borough,	American,
15	84	Joseph Sinearron,	37	Stetler Mines, S. N. S. & Co., Marcy township,	Italian,
17	85	Thos. Leshofsky,	24	Stetler Mines, S. N. S. & Co., Marcy township,	Italian,
17	86	Joseph Fritsam,	21	Stetler Mines, S. N. S. & Co., Marcy township,	German,
17	87	David J. Jones,	18	Mt. Pleasant Mines, W. T. S., Fourteenth ward, Scranton.	Welsh,
18	88	Martin Stanton,	35	Bellevue Shaft, D. L. & W., Lackawanna twp.,	Irish,
Dec. 5	89	Frank McCarthy,	15	Tunnel No. 1, Penna. C. Co., Pittston township,	American,
6	90	John McDonough,		Filer's Slope, J. & S., Winton borough,	Irish,
8	91	John McNulty,	20	Shaft No. 11, Penna. C. Co., Jenkins township,	American,
8	92	Patrick Toole,	13	Greenwood Mines, P. A. C. Co., Lackawanna township.	Irish,
9	93	John Mahon,	28	Diamond Mines, D. L. & W., Twenty-first ward, Scranton.	Irish,
10	94	W. F. Macnamarra,	22	Grassy Island Mines, G. I. C. Co., Olyphant bor.,	American,
11	95	Daniel Finnigan,	16	Tripp Mines, D. L. & W., Twenty-first ward, Scranton.	Irish,
22	96	Christian Maul,	40	White Oak Mines, D. & H., Archbald borough,	German,
30	97	Walter Healy,	16	Filer's Slope, J. & S., Winton borough,	English,

NOTE.—There were 97 persons seriously injured :

Legs fractured by falls of coal,	13
Legs fractured by falls of roof,	10
Legs fractured by cars in mines,	10
Legs fractured by cars outside,	4
Legs fractured by blasts,	2
Legs fractured from miscellaneous causes,	6
Total,	45

Continued.

Occupation.	Nature of Accident.	No. injured.
Miner,	Three ribs fractured; fall of blacksmith slate,	60
Footman,	Arm fractured in two places; hit by coal which fell from top landing in shaft tower,	61
Miner,	Leg fractured; hit by a piece of coal flying from blast,	62
Oiler,	Leg fractured; jumped on car at head of breaker, foot caught between car and post,	63
Miner,	Right leg fractured, and two ribs broken; fall of roof,	64
Miner,	Hit on head; fall of rock,	65
Driver,	Arm fractured; thrown off mule while taking it to the barn,	66
Pin-boy,	Leg fractured above the ankle; run car wheel on his leg,	67
Laborer,	Both legs fractured; fall of roof,	68
Laborer,	Head badly jammed; fall of rock roof,	69
Miner,	Leg fractured, afterwards amputated; fall of roof,	70
Miner,	Right leg fractured below the knee; fall of checkered coal,	71
Laborer,	Seriously injured; fall of top coal,	72
Miner,	Leg fractured near ankle; fall of rock,	73
Laborer,	Seriously injured; fall of roof,	74
Outside driver,	Skull fractured; kicked by a mule,	75
Miner,	Severely injured, shot missed fire; he was helping "Parry" in next place, to drill out hole, when powder exploded,	76
Runner,	Leg fractured; fell off mine locomotive in mines,	77
Miner,	Leg fractured; fall of coal,	78
Door boy,	Leg fractured; fell off trip of cars, and they ran on him,	79
Miner,	Two ribs fractured; caught between hoisting carriage and side of shaft,	80
Driver,	Skull fractured; caught between loaded car and rib; will recover,	81
Driver,	Right arm fractured; caught between car and rib,	82
Miner,	Leg fractured between knee and ankle, by a piece of coal rolling on it,	83
Laborer,	Leg mashed, foot amputated afterwards; fall of rock roof,	84
Laborer,	Skull fractured, pronounced serious; fall of rock roof,	85
Car runner,	Leg fractured above the knee; mine car run over it,	86
Driver,	Arm fractured; caught between two cars,	87
Miner,	Leg fractured; fall of coal,	88
Driver,	Arm fractured; caught between top rail of car and roof,	89
Laborer,	Hand crushed while in the act of lifting a car on track,	90
Laborer,	Leg fractured and cuts on his head; fall of rock,	91
Door-boy,	Collar-bone fractured; squeezed between car and mule,	92
Laborer,	Collar-bone broken; fall of roof,	93
Miner,	Right leg and left arm fractured; fall of top coal,	94
Driver,	Leg fractured; mule fell on him,	95
Miner,	Right leg fractured; hit by coal from blast,	96
Driver,	Seriously injured; fell in front of car, and it ran on him,	97

Arms fractured by falls of coal,	2
Arms fractured by falls of roof,	1
Arms fractured by cars in mines,	6
Arms fractured by blasts,	1
Arms fractured from miscellaneous causes,	5
Total,	15
Otherwise injured by falls of coal,	4
Otherwise injured by falls of roof,	10
Otherwise injured by cars in mines,	6
Otherwise injured by cars outside,	2
Otherwise injured by blasts,	7
Otherwise injured from miscellaneous causes,	8
Total,	37

TABLE No. 3.—*List of slight accidents reported to the Inspector of the Eastern all of Lackawanna and a portion of Wayne and Susquehanna counties, State of 31st day of De*

DATE.	No accident.	Names.	Age.	Colliery where Accident Occurred.	Nationality.
Jan. 2	1	John Coggins, . .	19	Scranton C. Co., D. L. & W., Lackawanna twp.,	Irish, . . .
3	2	John J. Hopkins, .	38	Oxford Shaft, D. L. & W., Fifth ward, Scranton,	Welsh, . .
3	3	John C. Jones,	25	Oxford Shaft, D. L. & W., Fifth ward, Scranton,	Welsh, . .
3	4	William Morgan, .	27	Oxford Shaft, D. L. & W., Fifth ward, Scranton,	Welsh, .
7	5	Charles Lyons, . .	40	Tompkins Mines A. T., Pittston borough, . .	Sco'h-Irish,
7	6	Michael Brady, .	14	Shaft No. 7, Penna. C. Co., Jenkins township,	American,
8	7	Thomas S. Evans,	30	Von Storch Mines, D. & H. C. Co., Second ward, Scranton.	Welsh, . .
8	8	Mark Hannan, . .	17	Continental Mines, D. L. & W., Lackawanna township.	Irish, . . .
10	9	John Haley, . . .	25	Twin Shaft, P. C. Co., Pittston borough, ...	Irish, . . .
10	10	Andrew Boyd, . .	30	Twin Shaft, P. C. Co., Pittston borough,	Irish, .
12	11	John George, . . .	22	Capouse Mines, L. I. & C. Co., Twenty-first ward, Scranton.	Hungarian,
16	12	John Buckley, .	45	National Mines, W. C. & Co., Twentieth ward, Scranton.	Irish, . .
22	13	Patrick Heraghty,	53	National Mines, W. C. & Co , Twentieth ward, Scranton.	Irish, . . .
24	14	Thomas Harvey, .	25	Bellevue Shaft, D. L. & W., Lackawanna twp., .	English, . .
29	15	James McNish, . .	40	Leggett's Creek Shaft, D. & H. C. Co., First ward, Scranton.	Irish, . . .
29	16	Owen Flannery, .	18	Coal Brook Mines, D. & H. C. Co., Carbondale city.	American,
Feb. 1	17	Ludwig Dowardo,	45	Florence Shaft, F. C. Co., Pittston township,	Italian, . .
5	18	John A. Moran, .	18	Cayuga Shaft, D. L. & W., Third ward, Scranton,	Irish, . .
6	19	John Beck, . . .	37	Capouse Shaft, L. I. & C. Co., Twenty-first ward, Scranton.	German, .
6	20	Motziers Zollner, .	37	Capouse Shaft, L. I. & C. Co., Twenty-first ward, Scranton.	German, .
6	21	Edward E. Davis,	45	Oxford Shaft, D. L. & W., Fifth ward, Scranton,	Welsh, . .
6	22	Rich. Newcomb, .	16	Meadow Brook Shaft, W. C. & Co., Twentieth ward, Scranton.	Irish, . .
8	23	John Moran, . . .	40	No. 2 Shaft, Penna. C. Co., Pittston borough,	Irish, . . .
8	24	Charles T. Baker, .	21	Cayuga Shaft, D. L. & W., Third ward, Scranton,	German, .
11	25	Michael Pace, . .	35	Fairmount Shaft, A. M. & Co., Pittston twp.,	American,
11	26	Levi Howells,	48	Eddy Creek Shaft, D. & H. C. Co., Olyphant bor.,	Welsh, . .
19	27	Evan D. Thomas, .	23	Dodge Shaft, D. L. & W., Lackawanna township,	Welsh, . .
20	28	David O. Thomas,	34	No. 2 Diamond Shaft, D. L. & W., Twenty-first ward, Scranton.	Welsh, . .
21	29	Thomas Lewis, . .	23	Pine Brook Shaft, L. I. & C. Co., Seventh ward, Scranton.	Welsh, . .
27	30	William Barber, .	48	Dunn Mines, P. A. C. Co., Old Forge township,	English, .
27	31	John Lighthold, .	19	Dunn Mines, P. A. C. Co., Old Forge township, .	German, .
27	32	John Jordan, . .	35	Leggett's Creek Shaft, D. & H. C. Co., First ward, Scranton.	Iri h, . .
27	33	John Flannelly, .	17	Gypsy Grove Shaft, Penna. C. Co., Dunmore borough.	American,
28	34	William Morgan, .	17	Archbald Shaft, D. L. & W., Lackawanna twp.,	American,
March 3	35	Frank McGuire, .	32	No. 12 Shaft, Penna. C. Co., Pleasant Valley borough.	Irish, . . .
5	36	Thomas Williams,	13	Continental Shaft, D. L. & W., Lackawanna township.	Welsh, . .
7	37	John Walsh, . . .	14	Coal Brook Mines, D. & H. C. Co., Carbondale city.	American,
11	38	Gregory Kane, . .	24	Forest City Mines, H. C. & I. Co., Clifford township, Susquehanna county.	Irish, . . .
14	39	John Munley, . .	23	Lucas Shaft, L. C. Co., Second ward, Scranton, .	Irish, . . .
14	40	Reese Jones, . .	21	No. 6 Shaft, Penna. C. Co., Jenkins township,	American,
14	41	Charles Buskirk,	20	Taylor Mines, D. L. & W., Lackawanna twp.,	American,
18	42	Zopher Pierce, . .	18	Sibley Mines, P. A. C. Co., Old Forge township,	American,
21	43	Thomas Black, . .	54	Brisbin Shaft, D. L. & W., Third ward, Scranton,	Scotch, . .
25	44	Charles Kelly, . .	26	Mosier Shaft, B. C. Co., Hughestown borough, .	Irish, . . .
26	45	David Phillips, . .	14	Sloan Mines, D. L. & W., Lackawanna township,	Welsh, . .
26	46	Thomas Jenkins, .	48	Lackawanna C. Co. Shaft, Blakely borough,	Welsh, . .
31	47	David S. Davis, . .	41	Hyde Park Shaft, D. L. & W., Fifth ward, Scranton.	Welsh, . .
31	48	Thomas Hughes, .	50	Taylor Mines, D. L. & W., Lackawanna twp., . .	Welsh, . .
April 2	49	John Muhlhearn, .	23	Everhart Mines, A. & Poble, Jenkins township,	Irish, . . .
4	50	John Barrett, . .	. .	Eagle Shaft, Penna. C. Co., Pittston borough, .	American,
4	51	Martin Tighe, . .	21	Eagle Shaft, Penna. C. Co., Pittston borough, .	American,
4	52	John Reese, . . .	22	Continental Mines, D. L. & W., Lackawanna township.	Welsh, . .
7	53	Thomas J. Powell,	59	Von Storch Mines, D. & H. C. Co., Second ward, Scranton.	Welsh, . .

District of the Wyoming coal fields, Luzerne and Carbon counties, now including Pennsylvania, and the cause as shown by his investigations, for the year ending cember, A. D. 1884.

Occupation.	Nature or Cause of Accident.	No. accident.
Laborer, . .	Slightly injured; explosion of gas,	1
Miner, ...	These three men were slightly injured; explosion of gas,	2
Miner, ...		3
Laborer, . . .		4
Laborer, . . .	Slightly injured; fall of coal and black rock,	5
Driver, . .	Injured slightly; a car of rock dumped on him,	6
Miner, ...	Slightly injured; fall of top coal,	7
Driver, . . .	Slightly injured; kicked by a mule,	8
Miner, ...	These two men were working together in a chamber, and the laborers were in the act of loading a car, when the roof fell, slightly injuring Haley and Boyd,	9
Laborer,		10
Outside labo'r,	Slightly injured; caught between wall at breaker and car,	11
Miner, ...	Shoulder dislocated; fall of top coal,	12
Laborer, . . .	Slightly injured; fell on track while putting car on,	13
Rockman, .	Shoulder slightly injured; fall of rock,	14
Miner, . . .	Face slightly burned; explosion of gas,	15
Laborer, . . .	Slightly injured; a mule stepped on his head,	16
Laborer, .	Slightly injured; fall of slate,	17
Black'h helper	Shoulder dislocated; fell off large railroad car at breaker,	18
Miner, ...	Both these men were slightly injured by a blast blowing through a pillar from next chamber; George Williams, who fired the blast, failed to notify them; he thought he was not so near through,	19
Laborer, . . .		20
Miner, ...	Slightly injured; premature blast,	21
Driver, . . .	Severely injured on body; trip of ears ran over him,	22
Miner, . . .	Slightly injured by boards falling on him in shaft,	23
Laborer, . .	Fell through hole in barn floor,	24
Miner, . . .	Slightly injured; squeezed between hoisting-carriage and buntons,	25
Miner, ...	Severely cut on body; premature blast,	26
Laborer, . . .	Slightly injured on foot; fall of coal,	27
Miner, ...	Slightly injured; fall of rock from middle of coal,	28
Miner, ...	Hand slightly burned; explosion of gas,	29
Miner, . . .	Slightly injured; fall of roof,	30
Water baller, .	Injured slightly; fall of roof,	31
Miner, ...	Right leg slightly injured; a collar fell on it,	32
Driver, ...	Slightly injured; kicked by a mule,	33
Runner, . . .	Injured slightly; coupling cars,	34
Laborer, . . .	Knee-joint dislocated; fall of rock,	35
Door-boy, . .	Slightly injured; kicked in the face by a mule,	36
Driver, . . .	Injured slightly; fell off mine car, and dragged along track about fifty feet by cars,	37
Miner, ...	Slightly injured; fall of top coal,	38
Laborer, .	Slightly injured; fall of coal,	39
Slope headman	Injured slightly; caught under hoisting-carriage,	40
Driver, ...	Slightly injured; hit on side of head by top rail of car,	41
Driver, . . .	Injured slightly; kicked on head by mule,	42
Miner, ...	Slightly injured; fall of rock,	43
Miner, ...	Injured slightly; fell in running from blast; cut his arm,	44
Outside driv'r,	Head badly cut; caught between breaker-chutes and culm car,	45
Miner, ...	Slightly injured; shot himself by blast,	46
Miner, ...	Injured slightly; fall of top coal,	47
Driver boss, .	Slightly injured; caught between car and pillar,	48
Laborer, . . .	Knee dislocated; hand and arm slightly injured; fall of rock,	49
Laborer, . . .	Both these men slightly injured; explosion of gas,	50
Laborer, . .		51
Laborer, . . .	Slightly injured; fall of roof,	52
Laborer, . . .	Slightly injured; a car ran against him, and knocked him against a pillar,	53

TABLE No. 3—

DATE.	No. accident.	Names.	Age.	Colliery where Accident Occurred.	Nationality.
April 11	54	George Davis, . .	21	Cayuga Shaft, D. L. & W., Third ward, Scranton,	Welsh, . .
12	55	John Nicholm, . .	38	White Oak Mines, D. & H. C. Co., Archbald boro.,	Polish, . .
14	56	John McNally, . .	15	Stark Mines, Penna. C. Co., Lackawanna twp., .	American,
15	57	Wm. M. Lewis, .		Belmont Mines, B. C. Co., Carbondale City, .	Welsh, . .
15	58	Henry Kneebone,	36	No. 13 Shaft, Penna. C. Co., Old Forge township,	English, . .
15	59	James Graham, .	14	No. 13 Shaft, Penna. C. Co., Old Forge township,	American,
21	60	Thomas Rodgers,	42	Taylor Mines, D. L. & W., Lackawanna twp., .	Welsh, . .
23	61	Patrick Craig, . .		Barnum Shaft, Penna. C. Co., Marcy township, .	Irish, . . .
24	62	Martin Moran, . .	22	Hampton Shaft, D. L. & W., Lackawanna twp.,	Irish, . . .
25	63	Joseph Cera, .	26	Coal Brook Brk'r, D. & H. C. Co., Carbondale City,	Italian, . .
25	64	Phillip Seymour,	16	Lackawanna Coal Co's Shaft, Blakely borough, .	English, . .
May 1	65	James Kello, . .	58	Shaft No. 8, Penna. C. Co., Hughestown boro., .	English, .
1	66	G. Darett, . . .	40	Eaton Ridge Shaft, J., S. & Co., Archbald boro.,	Hungarian,
2	67	Thomas Burns, . .	16	Marvine Shaft, D. & H. C. Co., First ward, Scranton,	American,
2	68	William Hartman,	14	Jermyn, No. 3, D. & H., and D. L. & W., Thirteenth ward, Scranton.	German, .
3	69	Frank Scisco, . .	16	Lucas Breaker, L. C. Co., Second ward, Scranton,	. . . . .
13	70	Grant Maxey, .	18	Dodge Shaft, D. L. & W., Lackawanna twp., . .	American,
15	71	James McGoff, . .	50	Hampton Shaft, D. L. & W., Lackawanna twp.,	Irish, . . .
16	72	Michael Sweeney,	39	Winton Slope, W. & W., Winton borough, .	Irish, . . .
16	73	John Black, . .	50	Shaft No. 5 Penna. C. Co., Jenkins township, .	English, . .
19	74	Jacob Murphy, . .		Lucas Shaft, L. C. Co., Second ward, Scranton, .	Irish, . . .
20	75	James Barr, . .		Leggett's Creek Shaft, D. & H., 1st ward, Scranton,	Irish, . . .
22	76	John Coleman, .	15	Shaft No. 10, Penna. C. Co., Hughestown boro.,	American,
26	77	Wm. D. Thomas,	56	Archbald Shaft, D. L. & W., Lackawanna twp.,	Welsh, . .
27	78	Patrick Curley, .	16	Law Shaft, Penna. C. Co., Pittston township, .	Irish, . .
28	79	Herman Mosier, .	16	Capouse Shaft, L., L. & C. Co., Twenty-first ward, Scranton.	German, .
31	80	Charles Harrup, .	43	Barnum Shaft, Penna. C. Co., Marcy township,	English, .
June 2	81	W. John Morgan,	21	Hyde Park Shaft, D. L. & W., Fifth ward, Scranton,	Welsh, . .
7	82	David W. Davis, .	66	Bellevue Shaft, D. L. & W., Lackawanna twp.,	Welsh, . .
9	83	Michael Cassidy, .	38	Sibley Mines, P. A. C. Co., Old Forge township,	Irish, . . .
13	84	Wm. Gaughan, .	14	Dodge Shaft, D. L. & W., Lackawanna township,	Irish, . . .
13	85	William Ruane, .		Lucas Shaft, L. C. Co., Second ward, Scranton, .	Irish, . . .
13	86	John Holmes, . .	24	Brisbin Shaft, D. L. & W., Third ward, Scranton,	Irish, . . .
16	87	Owen Reddy,	30	Shaft No. 9, Penna. C. Co., Pittston borough,	American,
17	88	William Kestell, .	44	Shaft No. 5, Penna. C. Co., Dunmore borough, .	English, . .
23	89	Richard Prethero,	27	Central Shaft, D. L. & W., Fifteenth ward, Scranton,	Welsh, . .
25	90	Evan Jenkins,	36	Brisbin Shaft, D. L. & W., Third ward, Scranton,	Welsh, . .
25	91	John Kelly,	17	Filer's Slope, W. & W., Winton borough, . .	Irish, . . .
27	92	Edward Watkins,	23	Powderly Slope, D. & H., Carbondale City, .	Welsh, . .
27	93	Martin Sweeney,	15	Manville Shaft, D. & H., Thirteenth ward, Scranton	Irish, . . .
28	94	Thomas Williams,	22	Brisbin Shaft, D. L. & W., Third ward, Scranton,	Welsh, . .
28	95	Allen Wark,	44	Eddy Creek Shaft, D. & H., First ward, Scranton,	Scotch, . .
July 7	96	Watkin Davis, . .		Grassey Island Shaft, D. & H., Olyphant boro., .	Welsh, . .
9	97	John Bowen, . .	48	Manville Shaft, D. & H., Thirteenth ward, Scranton	English, . .
9	98	John Mulderig, .	40	Shaft No. 6, Penna. C. Co., Jenkins township, .	Irish, . . .
12	99	Martin Walsh, . .	50	Capouse Shaft, L., L. & C. Co, Twenty-first ward, Scranton.	Irish, . . .
12	100	Thomas Sheridan,	55	Eddy Creek Shaft, D. & H., Olyphant borough, .	Irish, . .
12	101	Michael Kerby, .	24	White Oak Mines, D. & H., Archbald borough, .	Hungarian,
12	102	Martin Peel, .		Marvine Shaft, D. & H., First ward, Scranton, .	American,
21	103	Peter Job, . .	19	Capouse Shaft, D. & H., Twenty-first ward, Scranton	German, .
22	104	Dennis Donnovan,	19	Taylor Mines, D. L. & W., Lackawanna twp., .	Irish, . . .
25	105	Patrick Kelly, . .	38	Shaft No. 6, Penna. C. Co., Jenkins township, .	Irish, . . .
26	106	John Griffith, . .	41	National Mines, W., C. & Co., Twentieth ward, Scranton.	Welsh, . .
28	107	Michael Walsh, .	31	National Mines, W., C. & Co., Twentieth ward, Scranton.	Irish, . .
28	108	Patrick Waters,	27	National Mines, W., C. & Co., Twentieth ward, Scranton.	Irish, . . .
28	109	Michael Ford, . .	14	Coal Brook Mines, D. & H. C. Co., Carbondale City,	American,
Aug. 2	110	George Houk, . .	22	Brisbin Mines, D. L. & W., Third ward, Scranton,	German, .
4	111	Martin Walsh, . .	20	Dunn Mines, P. A. C. Co., Old Forge township,	Irish, . . .
4	112	William Davis, .	15	Tompkins Mines, A. Tompkins, Pittston boro.,	American,
5	113	Robert McLean, .	35	Jermyn, No. 4, J. Jermyn, Dickson City boro., .	Scotch, . .
6	114	Daniel Farrell, . .	25	Pierce Mines, P. C. Co., Archbald borough, . .	Irish, . . .
6	115	John McGlynn, .	40	Scranton C. Co., D. L. & W., Lackawanna twp.,	Irish, . . .
6	116	John Brown, . .	32	Scranton C. Co., D. L. & W., Lackawanna twp.,	Welsh, . .
7	117	John J. Morgan, .	38	Von Storch Mines, D. & H. C. Co., Second ward, Scranton.	Welsh, . .
7	118	Henry Jenkins, .	22	Von Storch Mines, D. & H. C. Co., Second ward, Scranton.	Welsh, . .
7	119	James Griffiths, .	45	Brisbin Mines, D. L. & W., Third ward, Scranton,	Welsh, . .
8	120	Henry Brothoro, .		Marvine Mines, D. & H., First ward, Scranton, .	Welsh, . .

Continued.

Occupation.	Nature or Cause of Accident.	No. accident.
Laborer,	Injured slightly in instep; fall of roof,	54
Miner,	Leg slightly injured; hit by a piece of coal flying from blast,	55
Driver,	Slightly injured; caught between prop and mine car,	56
Miner,	Severely hurt by blast; cut his match too short and could not get away far enough,	57
Miner,	Slightly burned; explosion of gas,	58
Driver,	Slightly injured; knocked by concussion caused by same explosion,	59
Miner,	Legs slightly injured; fall of rock,	60
Miner,	Slightly injured; hit by a piece of coal flying from blast,	61
Laborer,	Leg slightly cut by a piece of coal flying from blast,	62
Slate-picker,	Leg injured; hit by wire rope on head of culm dump plane,	63
Door boy,	Slightly injured; squeezed between car and prop,	64
Campany man,	Slightly injured; bruised about the back and shoulders; car run on to him,	65
Miner,	Injured slightly; fall of top coal,	66
Driver,	Injured on head; kicked by a mule,	67
Driver helper,	Severely injured on head; side of head crushed; kicked by a mule,	68
Outside driver,	Slightly injured on leg; caught between car and rail,	69
Driver,	Slightly injured on side and hips; caught between car and rib,	70
Laborer,	Badly squeezed between a trip of empty cars and rib,	71
Miner,	Slightly injured by a runaway car,	72
Miner,	Injured slightly; explosion of gas,	73
Miner,	Injured slightly; fall of coal,	74
Miner,	Slightly burned by an explosion of gas,	75
Driver,	Head slightly injured; caught between top of coal car and roof,	76
Miner,	Back severely bruised; fall of top coal,	77
Driver,	Slightly injured; kicked by a mule,	78
Driver,	Finger squeezed; caught between two cars while in the act of coupling them,	79
Miner,	Slightly injured; fall of black rock,	80
Laborer,	Injured slightly; premature blast,	81
Brattice man,	Slightly injured; fall of slate from rib while repairing track,	82
Miner,	Injured slightly; premature explosion of cartridge while cleaning out hole,	83
Driver,	Fingers slightly injured; car ran over them,	84
Miner,	Slightly injured; hit by coal from blast,	85
Miner,	Severely injured; fall of bony coal,	86
Miner,	Slightly injured by a piece of coal rolling on him,	87
Miner,	Burned slightly by an explosion of a powder cartridge,	88
Miner,	Slightly burned on face; explosion of gas,	89
Miner,	Slightly injured about face; fall of rock,	90
Driver,	Little finger mashed; caught between two cars,	91
Miner,	Slightly injured; fall of rock roof,	92
Driver,	Three fingers mashed; caught under car wheel,	93
Laborer,	Injured about back and hip; fall of top coal,	94
Miner,	Slightly burned; explosion of gas,	95
Pump man,	Slightly injured; caught by hoisting carriage,	96
Laborer,	Slightly burned on arm and back; explosion of gas,	97
Miner,	Fingers crushed badly; empty car run over them,	98
Laborer,	Slightly injured; fall of coal,	99
Laborer,	Back injured; fall of roof,	100
Laborer,	Slightly injured; fall of roof,	101
Driver,	Slightly injured; fell under mine car,	102
Driver,	Slightly injured; caught between two empty cars,	103
Laborer,	Slightly injured; fall of roof,	104
Laborer,	Slightly injured on hand; a piece of coal rolled on it,	105
Footman,	Slightly injured; hit by coal from blast,	106
Miner,	Injured slightly; explosion of gas,	107
Laborer,	Slightly injured by same explosion,	108
Driver,	Injured slightly on right leg; caught between two cars,	109
Laborer,	Finger taken off while in the act of taking a block from under wheel of loaded car in mines,	110 111
Laborer,	Slightly injured; hit by coal from blast,	112
Driver,	Slightly injured; hit by coal from blast,	113
Miner,	Burned on back; explosion of gas,	114
Laborer,	Slightly injured; fall of top coal,	115
Miner,	Burned slightly; explosion of gas; tapped a gas-feeder by blast,	116
Miner,	Slightly burned by same explosion,	117
Miner,	Thumb almost cut off; ax glanced off and hit it while in the act of making a wedge,	118
Miner,	Foot slightly injured; piece of coal fell on it,	119
Miner,	His leg slightly hurt; fall of rock,	120
Miner,	Slightly injured; he supposed his shot missed fire; exploded when he went back,	121

TABLE No. 3 –

DATE.	No. injured.	Names.	Age.	Colliery where Accident Occurred.	Nationality.
ug. 11	121	Thos. W. Jenkins,	49	Pine Brook Mines, L. I. & C. Co., Seventh ward Scranton.	Welsh, . .
12	122	Pat. McLoughlin,	27	Leggett's Creek Mines, D. & H. C. Co., First ward, Scranton.	Irish, ...
12	123	John Douger, . .	16	Filer's Slope, J. & Shutliffe, Winton borough, .	Irish, ...
13	124	Pat'k Kerrigan, .	18	Manville Mines, D. & H., and D. L. & W., Thirteenth ward, Scranton.	Irish, ...
13	125	Pat'k Maugan, 1st,	48	Greenwood Mines, P. A. C. Co., Lackawanna township.	Irish, ...
15	126	David Davis, . . .	46	Pine Brook Mines, L. I. & C. Co., Seventh ward, Scranton.	Welsh, . . .
15	127	Richard Kealty, .	17	Eaton Mines, J. S. & Co., Archbald borough,	American, .
16	128	Anthony Toner, .		Marvine Mines, D. & H., First ward, Scranton, .	Irish, ...
16	129	Rich'd Maugan, .	42	Von Storch Mines, D. & H., Second ward, Scranton,	Irish, . . .
18	130	John H. Evans,	42	Cayuga Mines, D. L. & W., Third ward, Scranton,	Welsh, .
18	131	Charles Miller, . .	28	Dodge Breaker, D. L. & W., Lackawanna twp.,	Polish, . . .
18	132	Albert Cleave, . .	28	Lackawanna C. Co. Mines, Blakely borough,	English, . .
20	133	Linden McGuire,	14	Ontario Breaker, L. V. C. Co., Pleasant Valley borough.	American, .
20	134	John Burns, . . .	50	Leggett's Creek Mines, D. & H., First ward, Scranton.	Irish, ...
25	135	John Butland, . .	22	Von Storch Mines, D. & H., Second ward, Scranton,	English, . .
26	136	Jerry Alger, .		Heidelberg Mines, L. V. C. Co., Pittston twp., .	English, .
29	137	Patrick Riley, . .	13	Capouse Mines, L. I. & C. Co., Twenty-first ward, Scranton.	American, .
29	138	John Hanihan, . .	25	Brisbin Mines, D. L. & W., Third ward, Scranton.	Irish, ...
Sept. 9	139	William Roberts,	40	Eddy Creek Mines, D. & H., Olyphant borough, .	Welsh, . . .
9	140	William Guest, .	40	Jermyn, No. 4, J. Jermyn, Dickson City bor., .	English, . .
11	141	Ebenezer Lloyd, .	38	Oxford Mines, D. L. & W., Fifth ward, Scranton,	Welsh, . . .
12	142	James Gibbons, .	21	Central Mines, D. L. & W., Fifteenth ward, Scranton.	Irish, ...
12	143	Pat'k Maugan, 2d,	45	Greenwood Mines, P. A. C. Co., Lackawanna township.	Irish, ...
12	144	Edward Jones, . .	45	Leggett's Creek Mines, D. & H., First ward, Scranton.	Welsh, . . .
12	145	John Murtough, .	41	Leggett's Creek Mines, D. & H., First ward, Scranton.	Irish, ...
13	146	William Salter, .		Shaft No. 14, Penna. C. Co., Jenkins township, .	Irish, ...
13	147	Walter Fink, . . .	16	Meadow Brook Mines, W. C. & Co., Twentieth ward, Scranton.	German, .
13	148	John Morris, .	40	Hyde Park Mines, D. L. & W., Fifth ward, Scranton.	Welsh, . .
15	149	William Fanning,	53	Heidelberg Mines, L. V. C. Co., Pittston twp., .	Irish, . .
15	150	Patrick Hines,	18	Shaft No. 10, Penna. C. Co., Hughestown bor., .	American, .
16	151	James Moran, . .	48	Dodge Mines, D. L. & W., Lackawanna twp.,	Irish, . . .
16	152	Albert Laisnix, .	24	Stetler Mines, S. N. S. & Co., Marcy township, .	German, . .
17	153	Eben Hughes,	49	No. 2 Diamond Mines, D. L. & W., Twenty-first ward, Scranton.	Welsh, . . .
19	154	William Forsythe,	30	Lucas Mines, L. C. Co., Second ward, Scranton, .	Irish, . . .
19	155	William Lynn,	45	Von Storch Mines, D. & H. C. Co., Second ward, Scranton.	English, . .
20	156	Tim'y McAndrew,	16	Slope No. 4, Penna. C. Co., Jenkins township, .	American, .
24	157	John Gordan, . .	42	Powderly Mines, D. & H., Carbondale City,	Irish, .
24	158	John Burke, . . .	35	Keystone Mines, H. C. & I. Co., Carbondale City,	American, .
27	159	Wm. Griffiths, . .	16	Taylor Mines, D. L. & W., Lackawanna twp., .	Welsh, .
27	160	David McDonald,	13½	Shaft No. 10, Penna. C. Co., Hughestown bor., .	American, .
27	161	Patrick Malia,	12	Lucas Mines, L. C. Co., Second ward, Scranton,	American, .
Oct. 3	162	John Lyden, 3d, .	30	Meadow Brook Shaft, W. C. & Co., Twentieth ward, Scranton.	Irish, ...
3	163	Martin M. Cannon,	17	Meadow Brook Shaft, W. C. & Co., Twentieth ward, Scranton.	American, .
6	164	Thomas Woods, .	19	National Mines, W. C. & Co, Twentieth ward, Scranton.	American, .
8	165	Wm. McAndrew,	13	Brisbin Breaker, D. L. & W., Third ward, Scranton	American, .
9	166	John Heffron, . .	13	Eddy Creek Mines, D. & H., Olyphant borough, .	American, .
10	167	James Nyland, . .	30	Fairmount Mines, F. C. Co., Pittston township,	English, . .
11	168	Thomas Coggins,	17	Sloan Mines, D. L. & W., Lackawanna twp.,	Irish, ...
13	169	Dom'ck McCarty,	28	Manville Mines, D. L. & W., and D. & H., Thirteenth ward, Scranton.	Irish, ...
16	170	George Fannen, .	13	Pancoast Mines, P. C. Co., Dickson City bor., .	American, .
16	171	Thomas Roberts, .	26	Scranton C. C. Mines, D. L. & W., Lackawanna township.	Welsh, . . .

Continued.

Occupation	Nature or Cause of Accident.	No. injured.
Miner,	Hands and face slightly injured; blast set fire to a gas-blower; he was burned by it,	121
Miner,	Slightly injured by an explosion of powder in his tool box,	122
Driver,	Injured slightly; kicked by a mule,	123
Plane runner,	Flesh wound on right leg; knocked under car,	124
Miner,	Slightly injured; fall of roof,	125
Miner,	Slightly injured; shot missed fire, went back too soon, and got caught,	126
Driver,	Injured; caught between car and mule,	127
Miner,	Slightly injured; premature blast,	128
Laborer,	Slightly injured; a spark from lamp fell into powder keg, which exploded,	129
Blacksmith,	Ankle dislocated; while in the act of putting car on track, rail fell on his foot,	130
Outside labor'r	Injured in bowels; caught between two cars under chutes,	131
Miner,	Burned; a spark from his lamp fell into some loose powder he was handling,	132
Outside driver,	Severely injured on calf of leg while in the act of stealing a ride on trip of cars, between breaker and shaft,	133
Miner,	Slightly burned; explosion of gas,	134
Laborer,	Finger broken; a piece of coal fell on it while in the act of drilling a hole,	135
Miner,	Slightly injured on hand; fall of top coal,	136
Driver,	Leg slightly injured; kicked by a mule,	137
Laborer,	Slightly injured about head and hip; fall of rock,	138
Miner,	Slightly burned on his arm; explosion of gas,	139
Engineer,	Severely burned in engine room, while in the act of filling a lighted kerosene lamp with oil,	140
Miner,	Burned slightly; explosion of gas,	141
Laborer,	Slightly injured; fall of roof,	142
Footman,	Slightly injured; hit by car while coming out of chamber,	143
Miner,	Ankle slightly injured; fall of roof,	144
Miner,	Ankle sprained slightly; slipped on piece of coal in chamber,	145
Rockman,	Slightly injured; hoisting bucket fell down shaft, and in getting out of way, he hurt himself,	146
Driver,	Injured slightly; kicked by a mule,	147
Miner,	Slightly injured; fall of roof,	148
Miner,	Injured slightly; fall of rock,	149
Wheelman,	Finger cut off; caught under wheel of loaded mine car in mines,	150
Miner,	Very slightly injured; fall of roof; (was only two days idle,)	151
Laborer,	Slightly hurt on hip; fall of rock roof,	152
Miner,	Slightly injured; fall of rock between top and bottom coal,	153
Miner,	Foot slightly injured; fall of roof,	154
Laborer,	Right ankle dislocated; fall of top rock while in the act of restanding a prop,	155
Driver,	Slightly injured; squeezed between loaded mine cars,	156
Miner,	Injured slightly; premature blast,	157
Miner,	Slightly injured; hit by coal from blast through rib, from next chamber,	158
Driver,	Slightly injured; hit by a mule in barn,	159
Outside driver,	Left hand crushed; car ran over it,	160
Door-boy,	Slightly injured; hook of stretcher caught him in the groin,	161
Miner,	Slightly injured; explosion of gas,	162
Runner,	Injured slightly; same explosion,	163
Runner,	Slightly injured; loaded car ran over his foot,	164
Driver,	Severe flesh wound; car ran on him on the culm dump,	165
Driver,	Slightly injured on outside plane by cars,	166
Miner,	Injured slightly; fall of top coal,	167
Driver,	Slightly injured over eyes; kicked by a mule,	168
Laborer,	Slightly injured by coal from blast,	169
Door-boy,	Flesh wound on arm; car ran on it,	170
Miner,	Bruised on hip and head; fall of bony coal,	171

TABLE NO. 3—

DATE.	No. accident.	Names.	Age.	Colliery where Accident Occurred.	Nationality.
Oct. 18	172	Jonathan Owens,	15	Dodge Mines, D. L. & W., Lackawanna twp.,	Welsh, . . .
18	173	Michael Houston,	12	Ontario Colliery, L. V. C. Co., Pleasant Valley bor.	Irish, . . .
22	174	John McDonough,	54	Filer's Slope, Jones & Shutliff, Winton borough,	Irish, .
22	175	A. Williams,	16	Lucas Mines, L. C. Co , Second ward, Scranton,	American, .
27	176	Wm. D. Thomas,	56	Archbald Mine, D. L. & W., Lackawanna twp., .	Welsh,
27	177	S. Gallagher, .	16	Leggett's Creek Mines, D. & H., First ward, Scranton.	American,
28	178	Patrick Gleason, .	17	Capouse Mines, L. I & C. Co., Twenty-first ward, Scranton.	Irish, ...
28	179	Patrick Narey, .	. .	Marvine Mines, D. & H. C. Co., First ward, Scranton.	American, .
29	180	Richard Jones, . .	45	Bellevue Slope Mines, D. L. & W., Lackawanna township.	Welsh, . . .
29	181	Thomas O'Brien,	22	Green Ridge Slope, O. S. J., Dunmore borough, .	Irish, . .
30	182	Michael McGuire,	22	Phœnix Mines, P. C. Co., Marcy township, .	American, .
Nov. 7	183	Jos. Canterberry,	24	Capouse Mines, L. I. & C. Co., Twenty-first ward, Scranton.	American, .
8	184	Daniel Neville, .	17	Brisbin Mines, L. & W., Third ward, Scranton, .	Irish, ...
11	185	Richard Davis, . .	48	Brisbin Mines, L. & W., Third ward, Scranton, .	Welsh, . . .
11	186	James Gorman, .	33	Shaft No. 5, Penna. C. Co., Jenkins township, .	Irish, . . .
11	187	William Armson,	23	Lucas Shaft, L. C. Co., Second ward, Scranton, .	Irish, ...
12	188	Ebenezer Powell,	28	National Mines, W. C. & Co., Twentieth ward, Scranton.	Welsh, . . .
12	189	Vincent Niper, .	25	Sibley Mines, P. A. C. Co., Old Forge township,	American, .
14	190	Reese Price, . . .	25	Green Ridge Slope, O. S. J., Dunmore borough,	Welsh, . . .
20	191	Daniel Price, . . .	15	Leggett's Creek Mines, D. & H., First ward, Scranton.	Welsh, . . .
21	192	James Frowen, .	23	Oxford Mines, D. L. & W., Fifth ward, Scranton,	Welsh, . . .
21	193	Cassw'n Morgan,	18	Sloan Mines, D. L. & W., Lackawanna township,	Welsh, . . .
21	194	D. Nottingham, .	20	Dodge Mines, D. L. & W., Lackawanna township,	Irish, . .
22	195	William Jenkins,	28	Pancoast Mines, P. C. Co., Dickson City borough,	American, .
24	196	Michael Carey, .	35	Olyphant, No. 2, D. & H., Olyphant borough,	Irish, ...
24	197	Frank Eynon, . .	26	Brisbin Mines, D. L. & W., Third ward, Scranton,	Welsh, . . .
25	198	Edward Narey, .	41	Von Storch Mines, D. & H., Second ward, Scranton.	Irish, ...
Dec. 1	199	Martin Murphy, .	12	Pierce Mines, P. C. Co., Archbald borough, . . .	American, .
1	200	Robert Orchard, .	12	Capouse Breaker, L. I. & C. Co., Twenty-first ward, Scranton.	English, . .
1	201	Michael Laffey, .	18	Greenwood Mines, P. A. C. Co., Lackawanna twp.	Irish, . . .
2	202	John Cook, .	27	Erie Mines, H. C. & I. Co., Greenwood borough,	American, .
3	203	Patrick Gillard, .	38	Dodge Mines, D. L. & W., Lackawanna township,	Irish, ...
5	204	John Barrett,	16	Shaft No. 13, Penna. C. Co., Lackawanna twp., .	Irish, ...
8	205	Anthony Toner, .		Marvine Shaft, D. & H., First ward, Scranton,	Irish, ...
8	206	John McGlynn, .	40	Scranton C. Co. Mines, D. L. & W., Lackawanna township.	Irish, ...
10	207	Pat O'Boyle, . . .	40	Bellevue Slope Mines, D. L. & W., Lackawanna township.	Irish, ...
12	208	Mike Powell, . . .	26	Eddy Creek Mines, D. & H., Olyphant borough, .	Polish, . . .
15	209	Bartley Mahon, .	19	Taylor Mines, D. L. & W., Lackawanna township,	Irish, ...
7	210	Daniel James, . .	15	Sloan Mines, D. L. & W., Lackawanna township,	Welsh, . .
18	211	Patrick Ruddy, .	14	White Oak Mines, D. & H., Archbald borough, .	American, .
19	212	Jacob Grosswait,	16	Shaft No. 5, Penna. C. Co., Dunmore borough, .	German, . .
22	213	Barney Doyle, . .	14	Oxford Mines, D. L. & W., Fifth ward, Scranton.	Irish, . . .
26	214	Frank Lewis, . .	14	Capouse Mines, L. I. & C. Co., Twenty-first ward, Scranton.	American, .
30	215	William Evans, .	15	Taylor Mines, D. L. & W., Lackawanna township,	Welsh, . . .
30	216	Evan Lewis, . . .	45	Brisbin Mines, D. L. & W., Third ward, Scranton,	Welsh, . . .
30	217	Mathew Jones, .	20	Brisbin Mines, D. L. & W., Third ward, Scranton,	English, . .

NOTE—There were 217 slight accidents.

Continued.

Occupation.	Nature and Cause of Accident.	No. accident.
Driver,	Slightly injured; fall of rock,	172
Door-boy,	Two fingers on right hand cut off while in the act of spragging a car,	173
Miner,	Slightly injured by a slab of rock falling on him,	174
Driver,	Injured slightly; a piece of coal fell down the shaft and hit him,	175
Miner,	Injured; fall of rock,	176
Driver,	Bad flesh wound on leg; caught by sprag in wheel of passing mine car,	177
Driver,	Finger slightly injured while uncoupling cars which were in motion,	178
Door-boy,	Breast slightly bruised; knocked down by passing mine car,	179
Miner,	Slightly injured; fall of top coal,	180
Miner,	Injured; hit by flying coal from blast,	181
Miner,	Slightly injured; explosion of gas,	182
Runner,	Slightly injured on face and lip while in the act of trying to sprag a mine car,	183
Driver,	Injured slightly; struck by loaded car in mines,	184
Miner,	Collar-bone fractured by fall of roof,	185
Miner,	Slightly injured on head; fall of soapstone,	186
Miner,	Injured slightly on head and legs; fall of roof,	187
Miner,	Severely burned by an explosion of powder in keg while handling it,	188
Footman,	Slightly injured; foot caught between car and hoisting carriage,	189
Miner,	Burned by gas while brushing it out of his working place,	190
Driver,	Little finger crushed; amputated afterwards; the accident occurred while in the act of spragging cars,	191
Miner,	Slightly injured; explosion of gas,	192
Driver,	Leg slightly injured; caught between car and floor of mine,	193
Laborer,	Arm slightly injured; fall of rock roof,	194
Laborer,	Back slightly injured; fall of roof,	195
Miner,	Small bone of left leg fractured; a piece of coal rolled on it,	196
Laborer,	Slightly cut on leg; fall of top coal,	197
Miner,	Foot slightly injured; fall of rock,	198
Door-boy,	Injured; went from his door into his father's chamber, and hit by flying coal from blast,	199
Slate-picker,	Hip dislocated and one rib broken; was sliding down guard-rail of stairway and fell about twenty-five feet,	200
Driver,	Slightly injured; squeezed between car and pillar,	201
Miner,	Injured slightly while in the act of barring down buck coal,	202
Miner,	Slightly injured on shoulder; fall of roof,	203
Outside driver,	Injured slightly; squeezed between car and ground outside,	204
Miner,	Severely injured by falling of a wooden horse in mines,	205
Miner,	Jammed between loaded and empty mine car,	206
Miner,	Hand and body bruised; fall of roof,	207
Laborer,	Slightly injured; caught between car and rib,	208
Laborer,	Slightly injured; squeezed by cars,	209
Driver,	Injured slightly; kicked by a mule,	210
Driver,	Two fingers cut off; wheel of mine car ran over them,	211
Door-boy,	Bad flesh wound on leg; run-away car caught him,	212
Driver,	Slightly burned on face and hands by gas-blower taking fire,	213
Door-boy,	Foot sprained; caught between two cars,	214
Driver,	Slightly injured; squeezed by cars,	215
Co. laborer,	Slightly injured; fall of top coal,	216
Driver,	Slightly injured by same fall,	217

TABLE No. 4.—*The number of each class of employés at each colliery in the and a portion of Wayne and Susquehanna counties*

MISCELLANEOUS

NAMES OF COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE							NO. OF		
	Bosses.	Miners.	Laborers.	Drivers and runners.	Door-boys.	All company men.	Total inside.	Bosses.	Mechanics.	Head and plate men.
1. *Everhart Mines,										
2. Tompkins Shaft,	2	30		8	4	42	86	1	4	4
3 Fairmount Shaft,	1	40	30	17	9	10	107	1	5	7
4. †Beaver Slope,	1	5	5	1		2	14	1		1
5. Twin Shaft,	3	48	35	20		21	127	3	4	7
6. Butler Shaft and Slope,	2	26	26	14	1	16	85	3	2	6
7. Mosier Shaft and Slope,	2	53	53	26	4	9	147	3	3	9
8. Heidelberg Shaft and Ontario Breaker,	2	42	42	32	8	75	201	2	7	4
9. Florence Shaft,	2	40	46	7	3	10	108	1	3	7
10. Phœnix Shaft,	1	41	41	16	4	10	113	2	3	5
11. Stetler Shaft,	3	110	100	35	12	28	288	1	8	8
12. Hillside and Consolidated Shafts,	1	63	63	21	4	33	185	1	12	8
13. Spring Brook Mines,	2	40	40	20	5	6	113	3	3	5
14. Glendale Mines,	1	40	30	9	1	4	85	1	4	6
15. Dunn Shaft and Slope,	1	62	68	28	6	20	185	1	6	8
16. Sibley Shaft,	1	50	33	18	8	6	116	1	4	3
17. Greenwood Shaft, Slope, and Tunnel,	2	110	95	40	20	35	302	1	12	18
18. National Shaft and Slope and Meadow Brook Tunnel,	2	110	35	50	19	30	246	1	2	7
19. Meadow Brook Shaft,	1	105	50	40	12	18	226	1	6	6
20. Amity Shaft,	2	32	64	8	1	9	116	1	8	4
21. Bridge Shaft and Slope,	1	37	44	23	9	14	128	1	4	7
22. Mount Pleasant Slope,	1	69	69	53	15	26	233	1	5	7
23. Capouse Shaft,	1	146	149	84	24	59	463	1	14	9
24. Pine Brook Shaft,	1	47	47	8	4	14	121	1	4	4
25. Fair Lawn Slope,	1	36	67	10	6	4	124	1	4	5
26. Green Ridge Slope,	1	95	95	55	21	20	287	1	5	6
27. Spencer Shaft,	1	53	53	22	9	18	156	2	4	9
28. Lucas Shaft,	2	85	85	39	6	28	245	1	6	7
29. Richmond Shaft and Tunnel,	1	20	10	5	2	5	43	1	3	3
30. Pancoast Shaft,	1	76	76	32	11	35	231	1	9	6
31. Jermyn No. 4 Shaft,	2	88	88	52	8	30	268	2	11	10
32. Lackawanna Coal Company Shaft,	1	70	70	40	10	15	206	1	5	6
33. Grassy Island Shaft,	2	130	90	40	10	15	287	1	14	8
34. Filer's Slope,	2	72	17	19	2	11	123	1	5	6
35. Dolph Mines,	1	29	36	12	2	5	85	2	5	5
36. Pierce Mines,	2	100	75	24	8	12	221	1	9	6
37. Eaton Shaft, Slope, and Tunnel,	2	99	20	28	6	9	164	1	8	7
38. Edgerton Mines,	2	82	67	22	5	6	184	2	3	6
39. Erie Shaft and Keystone Tunnel,	2	197	69	61	8	26	363	2	10	18
40. Forest City Shaft,	1	60	50	19	8	13	151	1	10	4
41 ‡Belmont Tunnel,										
42. ‡Brennan's Mines,										
Totals,	60	2,638	2,133	1,058	295	749	6,933	54	234	262

PENNSYLVANIA

43. No. 8 Breaker,	Shaft No. 1,		36	36	7	2	5	86	1	1	5
	Shaft No. 8,	1	46	46	18	2	9	122	1	3	7
	Slope No. 6,										
44. Shaft No. 4,	14-foot vein,	1	10	6	3			20	1	4	8
	Marcy vein,		78	10	12	4	9	113			
45. No. 6 Breaker,	Shaft No. 5,	1	39	44	16	5	10	115		5	6
	†Shaft No. 6,	1	42	40	20	5	16	124	1	3	8
	Shaft No. 11,		17	18	8	1	6	50		3	2
46. Shaft No. 7,		1	48	48	20	4	21	142	1	4	10

* No report; amount of coal estimated; not working at present. †Abandoned April 1.
‡ No report, except coal tonnage; not working at present.

Eastern district of Luzerne and Carbon counties, now including all of Lackawanna for year ending 31st day of December, A. D. 1884.

COAL COMPANIES.

Persons Employed Outside.				Total inside and out.	Number of horses and mules.	Number of kegs of powder used in 1884.	Number of tons of coal mined in 1884.	Number of days worked in 1884.	Number of persons killed.	Number of persons injured.	Tons of coal mined per life lost.	Tons of coal mined for each person injured.	Tons of coal mined for each employee.	Number.
Slate-pickers.	Drivers and runners.	All company men.	Total outside.											
.	.	.	.	. . . .	.	. .	28 000	135	. . .	. . .	. . . .	. . . .	. . .	1
25	2	2	38	124	9	700	16,247	141	.	. .			. . .	2
44	3	6	66	173	15	2,443	47.592	192	1	2	47,592	23,796	. . .	3
1	1	1	5	19	2	104	2.975	.	. . .	. . .	. . . .	. .	. . .	4
50		8	72	199	18	2,364	46.969	204½	. .	. .	. . . .	.	. . .	5
32	2	9	54	139	18	1,277	32 066	204½	. .	. .	. . . .	. . .	. . .	6
54	2	12	83	230	24	2,717	69,662	212			.		. . .	7
69	3	20	105	306	30	3,000	85,000	184¾	1	3	85,000	28,333	. . .	8
40	2	16	69	177	6	997	21,759	104.9	.				. .	9
28	1	10	49	162	20	2,727	46 714	185¼	. .	1	. . .	46,714	. . .	10
60	3	50	130	418	48	5,400	177,924	207	. .		.		. . .	11
55	9	33	98	283	28	2,054	60,387	170¾		1		60,387	. . .	12
24	6	24	65	178	15	1,165	38,700	175½	1	1	38,700	38,700	. . .	13
26	4	3	44	129	18	410	9.811	55		. .			. .	14
49	3	10	77	262	26	2,506	59 818	181	. . .	2		29,909	. . .	15
40	2	22	72	188	17	2,236	47,818	168	1	3	47,818	15,939	. . .	16
66	10	45	152	454	52	7,235	130,955	185	5	3	26,191	43,651	. . .	17
60	7	26	103	349	45	5,696	119.627	182½	1	5	119,627	23,925	. . .	18
65	8	25	111	339	44	6,822	143,263	207½		3	. . .	47,754	. . .	19
36	1	28	78	194	21	350	11.911	66	. .	. . .		. .	. .	20
70	4	42	128	256	40	2,237	64,560	198	2	. . .	32,280	. . . .	. .	21
83	5	38	139	372	34	3,200	107,000	178	2	6		. .	. . .	22
85	4	32	145	608	88	9 125	375,307	209	2	12	187,653	31,275	. . .	23
16	6	8	39	160	14	2,150	43.537	101	. . .	1		43,537	. . .	24
38	3	8	59	183	13	614	12,090	68	1	1	12,090	12,090	. . .	25
55	2	40	109	406	44	5,477	139,000	205	5	4	27,800	34,750	. .	26
47	7	47	116	272	25	1,550	55,070	109¼	. . .	. .	.		. . .	27
45	4	28	91	336	28	3.370	80.815	.	.	.	. . .	. . .	. . .	28
20	1	4	32	75	4	188	6,079	35	. . .		. . .		. . .	29
44	6	30	96	327	34	3 631	88,902	194½		7		12,701	. . .	30
58	3	47	131	399	25	3,257	95,746	195	3	. .	31,915		. . .	31
45	2	35	94	300	35	4.133	126,000	196	2	3	63,000	42,000		32
46	10	36	115	402	38	3,647	107,649	195	1	2	107,629	53,814	. .	33
30	2	26	70	193	14	1,852	42.614	. .	. . .	. . .	. .	. . . .	. . .	34
33	2	17	61	149	9	892	11,699	135	. . .	. .			. . .	35
34	3	25	78	296	23	3,061	98 028	169.9	1	3	98,028	32,676	. . .	36
56	3	23	98	262	40	2,850	81,749	199¾	. . .	1	. .	81,749	. . .	37
38	8	18	75	256	22	911	23,276	87	. .	2		11,638	. . .	38
47	5	33	115	478	61	5,176	155,501	199	1	2	155,501	77,750	. . .	39
26	3	15	59	210	28	4,378	72,696	240.	1	1	72,696	72,696	. . .	40
	. . .			.			18,331	135	. .	. . .	. .	. .	. . .	41
.	.	.	.	.	. . .	. . .	7,200	129	. .		. . . .	. . .	.	42
1,720	152	902	3,324	10,257	1,075	111,482	3,010,017							

COAL COMPANY.

19	5	6	37	123	13	. . . .	49,817	211	. .	. . .			405	
22	6	8	47	169	18	. . .	60,317	211	2	2	30,158	30,158	357	43
. .	. . .	.	. . .	.	. .	. . . .	2,137	39	. . .	.	. . . .			
2	. .	6	21	154	4	. . . .	56,595	205	. . .	1	. . .	56,595	368	44
. . .	.	. . . .			12	. . . .	. .	205	. .	. . .	. . .			
32	5	7	55	170	25	. . . .	65,911	210	.	4		16,478	388	
32	3	9	56	180	23	. . . .	49,498	210	1	3	49,498	16,499	275	45
12	2	4	23	73	14	. . . .	27,348	209	. .	1	. . . .	27,348	374	
4	. . .	8	27	169	20	. . . .	77,533	204	. . .	1	.	77,533	458	46

TABLE No. 4 –

PENNSYLVANIA COAL

NAMES OF COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE.									NO. OF
	Bosses.	Miners.	Laborers.	Drivers and runners.	Door-boys.	All company men.	Total Inside.	Bosses.	Mechanics.	Head and plate men.
47. No. 10 Breaker, Shaft No. 9,	1	48	48	17	3	11	128	1	3	7
47. No. 10 Breaker, Shaft No. 10, 7-ft. vein,	1	6	7	5		3	22		1	1
47. No. 10 Breaker, Shaft No. 10, 14-ft. vein,		6	8	5		5	24		1	2
47. No. 10 Breaker, Shaft No. 10, Marey vein,	1	70	68	25	7	11	182	1	4	8
48. Central Breaker, Shaft No. 12,	1	30	30	10	1	6	78	1	5	6
48. Central Breaker, Shaft No. 13,	1	30	30	21	4	14	100	1	4	6
48. Central Breaker, Law Shaft,	1	45	52	14	6	12	130	1	7	7
49. Slope No. 2,	1	30	28	12	1	11	83	1	5	3
50. Slope No. 4,	1	46	46	20	2	10	125	1	4	9
51. Tunnel No. 1,	1	44	26	11	3	5	90	1	3	6
52. Stark Shaft and Breaker,	Abandoned November 1, 1884.									
53. Barnum Breaker, No. 1, 7-ft. vein,		36	36	18	5	9	104		3	2
53. Barnum Breaker, No. 1, Marey vein,		8	8	1			17			2
53. Barnum Breaker, No. 1, 14-ft. vein,	1	44	44	12	6	9	116	1	3	2
53. Barnum Breaker, No. 2, 7-ft. vein,	1	20	20	6	4	4	55	1	3	1
53. Barnum Breaker, No. 2, 14-ft. vein,		20	20	5	3	4	52		3	1
54. Old Forge Shaft and Breaker,	1	66	66	15	4	10	162	1	8	11
55. Eagle Shaft,	Temporarily abandoned October 1, 1884.									
Number mining and preparing coal,	17	865	785	301	72	200	2,240	16	80	120
56. Carbon Hill,	Abandoned.									
57. Shaft No. 14, (sinking,)	1	24	6				31		4	4
58. Shaft No. 2,*										
59. Shaft No. 3,†									1	
60. Barnum air-shaft, &c., (sinkers,)	1	21	5				27			2
61. No. 2 Breaker,								1	1	5
62. Engineers, carpenters, and blacksmiths,									63	
63. Sundry labor, teamsters, &c.,										
Number opening mines, &c.,	2	45	11				58	1	69	11
Total Pittston Division,	19	910	796	301	72	200	2,298	17	149	131

DUNMORE

64. Shaft No. 2, Dunmore,	1	39	40	9	6	8	103	1	1	5
65. Shaft No. 3, Dunmore,	1	44	38	18	7	6	114	3	2	11
66. Shaft No. 4, Dunmore,		42	38	18	11	6	115			1
67. Shaft No. 5, Dunmore,	1	43	50	10	3	48	155	1	1	6
68. Dunmore Breaker, Dunmore,								3	1	2
69. No. 6½ Breaker, Dunmore,								3	1	10
Grand total,	22	1,078	962	356	99	268	2,785	28	155	166

DELAWARE, LACKAWANNA AND

70. Pyne Mines, shaft,	1	97	89	50	10	17	264	1	8	8
71. Taylor Mines, shaft and drift,	1	89	94	51	12	31	278	1	5	8
72. Archbald Mines, shaft and slope,	1	85	85	27	5	17	220	1	8	7
73. Sloan Mines, shaft and slope,	1	92	92	33	7	20	245	1	7	8
74. Continental Mines, shaft,	1	88	88	43	8	24	252	1	8	9
75. Hampton Mines, shaft,	1	110	75	45	12	39	282	1	10	15
76. Hyde Park Mines, shaft,	1	97	97	38	7	28	268	1	8	7
77. Central Mines, shaft,	2	109	113	42	15	32	313	1	9	6
78. Dodge Mines, shaft,	1	81	80	33	3	18	216	1	7	10
79. Scranton Coal Company Mines, slope,	1	62	62	24	3	10	162	1	7	7
80. Bellevue Mines, shaft,	1	58	58	17	2	17	153	1	14	13
81. Bellevue Mines, slope,‡	1	40	38	14	3	10	106			
82. Oxford Mines, shaft,	1	62	59	20	6	15	163	1	7	6

* Used for pumping water occasionally. † Used for pumping water.

Continued.

COMPANY—*Continued.*

Persons Employed Outside.				Total inside and out.	Number of horses and mules.	Number of kegs of powder used in 1884.	Number of tons of coal mined in 1884.	Number of days worked in 1884.	Number of persons killed.	Number of persons injured.	Tons of coal mined per life lost.	Tons of coal mined for each person injured	Tons of coal mined for each employee.	Number.
Slate-pickers.	Drivers and runners.	All company men.	Total outside.											
28	4	11	54	182	24	. . .	83,137	212	.	3	.	27 712	457	
2	1	2	7	29	7	. . .	25.667	212	.	2	.	12 833	421	47
2	1	2	8	32	6	. . .		212			.			
30	4	15	62	244	25	. . .	90,165	211	1	2	90,165	45,082	385	
18	2	9	39	119	10	. . . .	49.496	207	1	4	49,496	12.374	423	
15	8	5	39	139	27	. . . .	33,845	210	. . .	3		11.282	243	48
28	9	13	62	195	27	. . . .	72.991	206	.	1	. .	72,991	380	
1	.	8	18	101	17	. . .	39,237	205	.	.			388	49
1	6	6	27	152	32	. . .	62 911	211	1	1	62,911	62,911	414	50
1	1	5	17	107	14	. . .	40 393	205	.	3		13,464	378	51
. .	.	.	.			. . .	39,490	169	1	1	39 490	39.490	.	52
15	6	12	38	142	18	. .	109,977	212	1	1	54,988	36,659	683	
. .	.	.	2	19	1	. . .		1	1	2				
15	4	5	30	146	14	. . .	34,846	106	.	1		34,846	239	53
8	6	12	31	86	9	. . . .	73,902	212	. . .	. .	73,902	36,951	477	
7	3	3	17	69	8	. . .		212	1	2				
40	6	23	88	251	16	. .	14,923	42	.	.	. . .	.	60	54
. .	. .	.	.		. .	. .	18,325	184	. . .	2	. .	9,162	. . .	55
334	82	179	811	3,051	384		1,178,461	.	10	40				
. .	.	.	. . .	. .	. .	. . . .	. . . . .	. .	. .	. . .	. . . .	. . .	. . .	56
. . .	2	2	12	43	2	. . . .	. . . . .	. .	1	2	. . . .	. . . .	. . .	57
. . .	. .	. .	. . .	. .	. . .	. . . .	. . . . .	. . .	. .	2	. . . .	. . . .	. . .	58
. . .	.	. .	. . .	1	. . . .	. . . .	. . . . .	. . .	. .	. .	. . . .	. . . .	. .	59
. .	2	3	7	34	. . . .	. . . .	. . . . .	. . .	. .	. .	. . . .	. . . .	. . .	60
48	. .	12	67	67	. . .	. . .	. . . . .	. .	. .	. .	. . . .	. . . .	. . .	61
.	. . .	63	63	63	.	. . .	. . . . .	. .	. .	.	. . .	. . . .	. .	62
. .		113	113	113	70	. . .	. . . .	.	. .	. .	. .	.		63
48	4	130	263	321	72	. . . .	. . .	. .	1	4				
382	86	309	1,074	3,372	456	. . . .	. . .	. .	11	44				

DIVISION.

1	. .	6	14	117	9	. . .	51,834	212	.	1	. . .	. . .	. .	64
32	4	20	72	186	16	. . .	49.047	213	2	. . .	. . .	.	. .	65
.	2	. .	3	118	17	. . .	55,189	213		. . .	. . .	. . .	. .	66
31	1	17	57	212	10	. . . .	51,982	238	. . .	2	. . . .	. . . .	. . .	67
29	4	12	51	51	4	. . .	. . . .	212	. .	. . . .	. . . .	. . . .	. . .	68
31	2	17	64	64	2	. . .	. . . .	200	. .	. . . .	. . . .	. .	.	69
506	99	381	1,335	4.120	514	. . .	1,386,513	. . . .	13	47				

WESTERN RAILROAD COMPANY.

58	4	29	108	372	53	. . . .	148,193	180½	. . .	. . .	. . . .	. . . .	. . .	70
80	6	38	138	416	68	. . . .	124,118	175½	. . .	. . .	. . . .	. . . .	. . .	71
55	8	32	111	331	38	. . .	114,876	170.4	. .	. .	. . .	. . . .	. . .	72
86	8	28	138	385	50	. . . .	124,538	176 3	.	.	. . .	. . . .	. . .	73
54	4	19	95	347	50	. . .	136,894	180.1	. .	. . .	. . .	. . . .	. . .	74
80	4	35	145	427	70	. . . .	146,596	177.4	. .	. .	. . .	. . . .	. . .	75
65	4	40	125	393	49	. . . .	138 681	180.3	. . .	. . .	. . .	. . . .	. .	76
67	6	31	120	433	60	. . . .	173.335	180½	. . .	. . .	. . .	. . . .	. . .	77
32	9	23	82	298	64	. . .	113,240	176½	. . .	. . .	. . .	. . .	. . .	78
39	8	28	90	252	42	. . . .	76,525	171.6	.	.	. . .	. . . .	. . .	79
105	13	32	178	331	45	. . . .	74,553	180.8	.	. . .	. . .	. . . .	. . .	80
. .	.	. .	. . .	106	22	. . . .	68,164		. .	. . .	. . .	. . . .	. . .	81
71	5	18	108	271	44	. . . .	66,104	177.9	. .	. . .	. . .	. . . .	. . .	82

‡ Coal goes to Shaft Breaker.

TABLE No. 4 –

DELAWARE, LACKAWANNA AND WEST

NAMES OF COLLIERIES.	NUMBER OF PERSONS EMPLOYED INSIDE									NO. OF
	Bosses.	Miners.	Laborers.	Drivers and runners.	Door-boys.	All company men.	Total inside.	Bosses.	Mechanics.	Head and plate men.
83. Diamond Shaft, No. 2,	1	51	51	33	6	18	160		8	9
84. Tripp Slope Mine,	1	40	40	26	3	28	138	1	8	6
85. Tripp Shaft Mine,		14	14	3	2	5	38		2	
86. Diamond Slope, No. 2,*						4	4			
87. Manville Mine, shaft,	1	95	95	57	22	28	298	1	4	7
88. Brisbin Mine, shaft,	1	97	85	36	10	25	254	1	7	7
89. Cayuga Mine, shaft,	1	81	81	36	9	23	234	1	7	7
90. Storr's Shaft,		3	2			3	8		2	
	19	1,451	1,401	628	145	412	4 056	16	136	140

DELAWARE AND HUDSON

91. Racket Brook,								1	3	6
92. Coal Brook,	2	181	85	69	10	39	386	1	11	9
93. No. 1 Shaft,	1	143	19	47	3	21	234	1	2	8
94. No. 3 Shaft,	2	50	12	14	6	11	95	1	3	4
95. Powderly,	1	96	6	30	3	16	152	1	3	5
96. Jermyn, No. 1,	1	142	35	28	5	22	233	1	11	6
97. Jermyn, No. 2,	1	42	20	14		10	87	1	3	5
98. White Oak,	1	114	47	32	12	14	220	1	7	6
99. Grassy Island,	2	139	40	31	3	22	237	1	10	10
100. Olyphant, No. 2,	1	70	42	29	4	20	166	1	10	10
101. Eddy Creek,	1	73	42	32	3	21	172	1	10	10
102. Marvine,	1	98	82	67	21	41	310	1	10	9
103. Leggitt's Creek,	1	102	67	68	17	40	295	1	11	8
104. Von Storch,	2	130	130	101	18	70	451	1	10	15
105. Manville,										
106. Miscellaneous,										
	17	1,380	627	562	105	347	3,038	14	104	111

RECAPITU

107. Miscellaneous Coal Companies,	60	2,638	2,133	1,058	295	749	6,933	54	231	262
108. Pennsylvania Coal Company,	22	1,078	962	356	99	268	2,785	28	155	166
109. Delaware, Lackawanna and Western Railroad Company,	19	1,451	1,401	628	145	412	4,056	16	136	140
110. Delaware and Hudson Canal Company,	17	1,380	627	562	105	347	3,028	11	104	111
111. Local coal sale mines,	3	82	54	4	55		198	2		3
112. Miscellaneous employees not reported,										
Grand total,	121	6,629	5,177	2,608	699	1,776	17,010	114	629	382
Add 6 per cent. for home consumption, steam power, mine furnaces, &c., &c.,										
Total coal mined,										

*Worked out.

Continued.

ERN RAILROAD COMPANY—*Continued.*

PERSONS EMPLOYED OUTSIDE.														
Slate-pickers.	Drivers and runners.	All company men.	Total outside.	Total inside and out.	Number of horses and mules.	Number of kegs of powder used in 1884.	Number of tons of coal mined in 1884.	Number of days worked in 1884.	Number of persons killed.	Number of persons injured.	Tons of coal mined per life lost.	Tons of coal mined for each person injured.	Tons of coal mined for each employee.	Number.
91	7	36	151	311	63	. .	100,505	178.6	. .	. . .	. .	. .	. .	83
56	8	25	104	242	63	. . .	65,347	176.6	. .	.	. .	. .	. .	84
.	.	6	8	46		. .	4,146	92.2	. .	. . .	. .		. .	85
.	. .			4		. .	21,789	145.1	.	.	. .	. . .	.	86
46	7	35	100	398	46	. .	84,107	92.2		.	. .			87
64	6	21	108	362	50	. . .	130,601	178¼	. . .		. .	. . . .	. . .	88
72	5	24	116	350	42	. . .	113,218	173.1		. . .	. . .	. . .		89
		3	5	13		.	.	.					.	90
1,122	112	504	2,030	6 086	919	.	2,025,530							

CANAL COMPANY.

45	6	14	75	75	4	. .	157,797.06	208	.		.	. .	.	91
89	22	44	176	562	82	.	199,698.18	209	. .	.	. .	. .		92
5	2	14	32	266	32	. .	51,955.08	204	.	. .	. .		. .	93
2	2	8	20	115	10	. .	11 001 19	191½	.	.	. . . .	. .	.	94
4	1	11	25	177	21	. .	49.922.15	206½	. . .	.	. . .	.	. . .	95
36	7	27	88	321	33	. .	117,092.09	206½	. .	. .	. .	. .	. .	96
4	2	8	23	110	18	. .	66.021.00	195	.	.	. .	. .	.	97
63	9	23	109	329	35	. .	114 353.00	207¼	. .	. .	. .	. . .	. .	98
49	8	26	104	341	42	. .	115,582.15	206½	.	.	. .	. .	. .	99
36	4	20	81	247	34	.	72 145.06	204	.	.		. .	. .	100
54	2	21	98	270	25	. .	84,277.12	206	.		. . .	. . .	. .	101
42	5	31	98	408	56	. .	154.833.67	205	. . .		. .	. .	. .	102
56	3	38	117	412	54	. .	133.531.14	198		. .	. .	. .	.	103
46	4	46	122	573	77	. . .	209 450.00	203	.		. .		.	104
. . .	. . .	.	.	.	.	. .	86,780.13	94½	.		. .	. .		105
	.	.	85	85		. .	.	.				. .		106
531	77	331	1,253	4,291	523		1,624,444							

LATION.

1,720	152	902	3,324	10,257	1,075	111,482	3 010,017	. .		.	. .	.	.	107
506	99	381	1 335	4,120	514	. .	1,386,513	. .	.	.	. .	.	.	108
1,122	112	504	2,030	6.086	919	. . .	2 025,530	. .	.	.	. .	. . .	.	109
531	77	331	1,253	4 291	523	. .	1,624,444	.		.	. .	. .	. . .	110
	6	53	64	262	46	. . .	44,712	. .	.	.	. .	. .	.	111
			200	200	. .		.	.		.				112
3,879	446	2,171	8,206	25,216	3.077	111,482	8,091,216							
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. .	485,473							
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. .	8,576.689							

TABLE No. 5.—*Giving the names and locality of Collieries, also names of land Luzerne and Carbon counties, now including all of Lackawanna, and a portion December 31, A. D. 1884.*

MISCELLANEOUS

NAME OF COAL MINE OR COLLIERY.	Where Located.	By Whom Operated.
1. Everhart Mines,	Jenkins township,	Not working. No report
2. Tompkins Shaft,	Pittston "	Alva Tompkins,
3. Fairmount Shaft,	" "	Fairmount Coal Company,
4. Beaver Slope,	" borough,	Waterman & Beaver,
5. Twin Shaft,	" "	Pittston Coal Company,
6. Butler Shaft and Slope,	" township,	Butler Coal Company,
7. Mosier Shaft and Slope,	Hughestown borough,	" "
8. Heidelberg Shaft,	Pittston township,	Lehigh Valley Coal Company,
9. Florence Shaft,	" "	Florence Coal Company,
10. Phœnix Shaft,	Marcy township,	Phœnix Coal Company,
11. Stetler Shaft,	" "	S. N. Stetler & Co.,
12. Hillside Shaft,	Pleasant Valley borough,	Hillside Coal and Iron Company,
13. Spring Brook Mines,	Lackawanna township,	William E. Colbourn,
14. Glendale Mines,	" "	Glendale Coal Company,
15. Dunn Shaft and Slope,	Old Forge township,	Pennsylvania Anthracite Coal Company, John Jermyn, General Manager,
16. Sibley Shaft and Slope,	" "	
17. Greenwood Shaft, Slope, & Tunnel	Lackawanna township,	
18. National Shaft, slope, and Meadow Brook tunnel,	20th ward, city of Scranton,	William Connell & Co.,
19. Meadow Brook Shaft,	" " "	" " "
20. Amity Shaft,	Lackawanna township,	Amity Coal Company,
21. Bridge Shaft and Slope,	14th ward, city of Scranton,	Bridge Coal Company,
22. Mount Pleasant Slope,	14th " " "	William T. Smith,
23. Capouse Shaft,	21st " " "	Lackawanna Iron and Coal Co.,
24. Pine Brook Shaft,	7th " " "	" " "
25. Fair Lawn Slope,	7th " " "	Fair Lawn Coal Company,
26. Green Ridge Slope,	Dunmore borough,	O. S. Johnson,
27. Spencer Shaft,	" "	A. D. & L. M. Spencer,
28. Lucas Shaft,	2d ward, city of Scranton,	Union Coal Company,
29. Richmond Mines,	2d " " "	William H. Richmond,
30. Pancoast Shaft,	Dickson City borough,	Pancoast Coal Company,
31. Jermyn, No. 4, Shaft,	" " "	John Jermyn,
32. Lackawanna Coal Co. Shaft,	Blakely borough,	Lackawanna Coal Company,
33. Grassey Island Coal Co. Shaft,	Winton "	Grassey Island Coal Company,
34. Filer's Slope,	" "	Jones & Shurtliff,
35. Dolph Mines,	" "	Edward Dolph,
36. Pierce Mines,	Archbald "	Jones, Simpson & Co.,
37. Eaton Shaft, Slope, and Tunnel,	" "	" " "
38. Edgerton Mines,	" "	Edgerton Coal Co., Limited,
39. Erie Shaft and Keystone Tunnel,	Glenwood borough,	Hillside Coal and Iron Company
40. Forest City Shaft,	Clifford twp., Susquehanna co.,	" " "
41. Belmont Mines,	Carbondale City,	Butler Coal Company,
42. Brennan Mines,	Fell township,	Watkins & Williams,

PENNSYLVANIA

43. No. 8 Breaker,	Shaft No. 1,	Hughestown borough,	Pennsylvania	Coal Company,
	Shaft No. 8,	" "	"	" "
	Slope No. 6,	" "	"	" "
44. Shaft No. 4,		Pittston borough,	"	" "
45. No. 6 Breaker,	Shaft No. 5,	Jenkins township,	"	" "
	Shaft No. 6,	" "	"	" "
	Shaft No. 11,	" "	"	" "
46. Shaft No. 7,		" "	"	" "
47. No. 10 Breaker,	Shaft No. 9,	Pittston borough,	"	" "
	Shaft No. 10, 7-foot vein,	Hughestown borough,	"	" "
	Shaft No. 10, 14-foot vein,	" "	"	" "
	Shaft No. 10, Marcy,	" "	"	" "
48. Central Breaker	Shaft No. 12,	Pleasant Valley borough,	"	" "
	Shaft No. 13,	Old Forge township,	"	" "
	Law Shaft,	Pittston township,	"	" "
49. Slope No. 2,		Jenkins township,	"	" "
50. Slope No. 4,		" "	"	" "
51. Tunnel No. 1		Pittston township,	"	" "
52. Stark Shaft and Breaker,		Lackawanna township,	"	" "

owners, operators, and officers in the Eastern District of the Wyoming Coal Fields, of Wayne and Susquehanna counties, State of Pennsylvania, for the year ending

COAL COMPANIES.

Name of General Mine Superintendents and Assistants.	Name of Mining Boss.	Name of Outside Foreman.	Number.
sent to Inspector's office.	. . . . .	. . . . .	1
Alva Tompkins, ...	David W. Evans, ...	W. S. Tompkins, ...	2
R. Morris, ...	J. Hablett, ...	George R. Smith, ...	3
Daniel Edwards, ...	Frederick Burkert, ...	John J. Powell, ...	4
F. C. Dinniuny, Jr., ...	Thomas Watkins, ...	G. H. Tench, ...	5
" "	James O'Neil, ...	F. E. Reed, ...	6
" "	William O'Neil, ...	Jesse Weaver, ...	7
Fred Mercur, ...	A. Reese, ...	A. G. Mason, ...	8
Austin Moore, ...	Burned down in August, 1884.	. . . . .	9
R. T. Bliss, ...	Thomas Smiles, ...	R. T. Bliss, ...	10
S. N. Stetler, ...	John F. O'Hara, ...	James A. O'Hara, ...	11
W. A. May, ...	M. M. Walsh, ...	J. H. Snyder and J. D. Caryl,	12
William E. Colbourn, ...	Eben Frew, ...	Edward Newlin, ...	13
F. A. Beamish, ...	Timothy Palfrey, ...	John M. Coyne, ...	14
O. D. Shepherd, Superintendent and Engineer, ...	Samuel Baker, ...	Joseph J. Curt, ...	15
	F. W. Courtwright, ...	James J. Coyne, ...	16
	T. W. Phillips and Martin Ryan,	M. L. Coyne, ...	17
William Connell, ...	Thomas L. Jones, ...	Robert Penuman, ...	18
" "	Samuel T. Jones, ...	Patrick Judge, ...	19
S. N. Stetler, ...	Evan J. Evans, ...	H. R. Stetler, ...	20
A. B. Stevens, ...	J. H. Powell, ...	D. P. Brooks, ...	21
William T. Smith, ...	James R. James, ...	Thomas D. Bevan, ...	22
Reese G. Brooks, ...	John Lovering, ...	Walter F. Hussey, ...	23
" "	Reese R. Griffiths, ...	Henry Hess, ...	24
John H. Hosie, ...	John Probst, ...	Michael Helfers, ...	25
O. S. Johnson, ...	Martin Gallagher, ...	W. S. Boyd, ...	26
A. D. Spencer, ...	P. H. Mongom, ...	Charles Engle, ...	27
S. N. Stetler, ...	John Morris, ...	Jacob Bowman, ...	28
William H. Richmond, ...	Patrick Riley, ...	William H. Richmond, . . .	29
George Griffin, ...	Phillip H. Bohner, ...	Richard Williamson, ...	30
J. J. Jermyn, ...	John Van Bergen, ...	John Biglin, ...	31
O. S. Johnson, ...	Richard D. Roberts, ...	William Harper, ...	32
C. D. Simpson, ...	Michael Grimes, ...	David E. Stearns, ...	33
William S. Jones, ...	George Gleason, ...	John Cummings, ...	34
Edward Dolph, Jr., ...	Alexander Frew, ...	. . . . .	35
Edward Jones, ...	Thomas S. Thomas, ...	Eugene Taylor, ...	36
" "	James M. Eaton, ...	John W. Eaton, ...	37
Andrew Clarkson, ...	Andrew Clarkson, ...	W. A. Wheeler, ...	38
W. A. May, ...	Peter McElhenny, J. Grady, a'st	William Walker, ...	39
" "	Benjamin Maxey, ...	A. L. Reed, ...	40
F. C. Dinniuny, Jr., ...	. . . . .	Paul Burton, ...	41
D. W. Williams, ...	D. W. Williams, ...	. . . . .	42

COAL COMPANY.

Andrew Bryden, ...	Alexander Thompson, ...	Dathan Morse, ...	43
" "	" "	Hugh Ferguson, ...	
" "	" "	Dathan Morse, ...	
" "	Phillip McCabe, ...	James Delaney, ...	44
William Law, ...	Benjamin Harding, ...	Loftus Campbell, ...	45
" "	William Reynolds, ...	" "	
Andrew Bryden, ...	Benjamin Harding, ...	" "	
William Law, ...	William Reid, ...	John Porteous, ...	46
Andrew Bryden, ...	Adam Harkness, ...	Cuthbert Snowdon, ...	47
" "	William Abbott, ...	" "	
" "	" "	Henry Searle, ...	
" "	John M. Lewis, ...	" "	
William Law, ...	Robert McMillan, ...	Thomas Martin, ...	48
" "	Thomas Weir, ...	George M. Snyder, ...	
" "	John Allen, ...	" "	
" "	Henry Jopling, ...	John Glenn, ...	49
Andrew Bryden, ...	James Watson, ...	Samuel McDowell, ...	50
William Law, ...	Samuel Bennett, ...	Thomas Hastie, ...	51
" "	Alexander Laird, ...	Richard Howard, ...	55

TABLE No. 5—

PENNSYLVANIA COAL

NAME OF COAL MINE OR COLLIERY.	Where Located.	By Whom Operated.
53. Barnum Breaker, { No. 1, 7-foot vein,	Marcy township,	Pennsylvania Coal Company,
No. 1, Marcy vein,	" "	" " "
No. 1, 14-foot vein,	" "	" " "
No. 2, 7-foot vein,	" "	" " "
No. 2, 14-foot vein,	" "	" " "
54. Old Forge Shaft and Breaker,	Old Forge township,	" " "
55. Eagle Shaft,	Jenkins township,	" " "
56. Carbon Hill,	Old Forge township,	" " "
57. Shaft No. 14,	Jenkins township,	" " "
58. No. 2 Breaker,	Pittston township,	" " "

DUNMORE

59. Shaft No. 2, Dunmore,	Dunmore borough,	Pennsylvania Coal Company,
60. Shaft No. 3, Dunmore,	" "	" " "
61. Shaft No. 4, Dunmore,	" "	" " "
62. Shaft No. 5, Dunmore,	" "	" " "

DELAWARE, LACKAWANNA AND

63. Diamond Tripp Slope,	21st ward, city of Scranton,	Del. Lack. and Western R.R. Co.
64. Diamond Tripp Shaft,	" " "	" " "
65. Diamond No. 2 Shaft,	" " "	" " "
66. Hampton Shaft,	Lackawanna township,	" " "
67. Bellevue Shaft,	" "	" " "
68. Bellevue Slope,	" "	" " "
69. Scranton Slope,	" "	" " "
70. Continental Shaft,	" "	" " "
71. Taylor Shaft,	" "	" " "
72. Oxford Shaft,	5th ward, city of Scranton,	" " "
73. Hyde Park Shaft,	5th " " "	" " "
74. Central Shaft,	15th " " "	" " "
75. Dodge Shaft,	Lackawanna township,	" " "
76. Archbald Shaft,	" "	" " "
77. Sloan Shaft,	" "	" " "
78. Cayuga Shaft,	3d ward, city of Scranton,	" " "
79. Brisbin Shaft,	21st " " "	" " "
80. Pyne Shaft,	Lackawanna township,	" " "
81. Storrs Shaft,	Dickson City borough,	" " "
82. Manville Shaft,	13th ward, city of Scranton,	D. L. & W. and D. & H. C. C. each

DELAWARE AND HUDSON

83. Racket Brook,	Carbondale township,	Delaware and Hudson Canal Co.,
84. Coal Brook,	Carbondale City,	" " "
85. No. 1 Shaft,	" "	" " "
86. No. 3 Shaft,	" "	" " "
87. Powderley,	Carbondale township,	" " "
88. Jermyn, No. 1,	Jermyn,	" " "
89. Jermyn, No. 2,	"	" " "
90. White Oak,	Archbald,	" " "
91. Grassy Island,	Olyphant,	" " "
92. Olyphant, No. 2,	"	" " "
93. Eddy Creek,	"	" " "
94. Marvine,	Scranton, 1st ward,	" " "
95. Leggetts' Creek,	" 1st ward,	" " "
96. Von Storch,	" 2d ward,	" " "
97. Manville,	" 13th ward,	" " "

Continued.

COMPANY—*Continued.*

Name of General Mine Superintendents and Assistants.	Name of Mining Boss.	Name of Outside Foreman.	Number.
Andrew Bryden,	Henry McMillan,	Anthony Horan,	
" "	" "	" "	
" "	James A. Bryden,	" "	53
" "	Henry McMillan,	William Anderson,	
" "	James A. Bryden,	" "	
William Law,	Charles Aikman,	Richard Howard,	54
" "	" "	Edward Oxenrider,	55
" "	" "	Frederick Repp,	56
John B. Law,	Robert Vivian,	Robert Vivian,	57
		John Walsh,	58

DIVISION.

John B. Smith. James Young, assistant,	John Moffatt,		59
" "	P. H. O'Hora,	John W. Marshall,	60
" "	" "	James Masters,	61
" "	John Moffatt,	Christopher Moffatt,	62

WESTERN RAILROAD COMPANY.

W. R. Storrs, genl. coal agent. B. Hughes, genl. inside supt. W. H. Storrs, genl. outside supt. Thomas D. Davis, asst. inside genl. supt.	Joseph D. Lloyd,	Daniel Langstaff,	63
	" "	" "	64
	Rees T. Evans,	" "	65
	Thomas Carson,	B. C. Green,	66
	John Hale,	John M. Acker,	67
	Thomas Eynon,	" "	68
	H. P. Davies,	John H. Hoffman,	69
	William Douse,	James F. Green,	70
	Morgan Harris,	J. P. Cooper,	71
	James A. Evans,	William Langstaff,	72
	David W. Moser,	Robert Ruthven,	73
	Lewis Roberts,	John A. Mears,	74
	John W. Davies, assistant,		
	Edward James,	E. E. Thomas,	75
	Elijah Dagger,	John Fern,	76
	John T. Williams,	John Rees,	77
	Thomas Watkins,	G. S. Decker,	78
	Frank Zimmerman,	Edward Evans,	79
	John L. Lewis,	Adam Rheinhart,	80
	Thomas Watkins,	G. S. Decker,	81
	Thomas W. Phillips,	J. L. Atherton,	82

CANAL COMPANY.

A. H. Vandling, general supt. A. Nicol, supt. A. B. Nicol, asst. supt.,		William P. E. Morss,	83
" "	William McMyne,	William Bowers,	84
" "	Patrick McCabe,		
" "	John Waterfield,	James P. Loftus,	85
" "	John Hughes,	Thomas Coogan,	86
" "	William Dunstan,		
" "	A. P. Patten,	Robert Carter,	87
" "	Joseph Tennis,	T. C. Griffin,	88
" "	J. J. Kearney,	Thomas Hunter,	89
" "	James Nicol,	Thomas Law,	90
" "	Andrew Patten,	J. G. Bell,	91
" "	James Vessie,		
" "	Richard Mason,	William Bell,	92
" "	John W. Jones,	S. S. Gritman,	93
" "	Joseph V. Birtley,	B. B. Atherton,	94
" "	Finlay Ross,	George W. Wilder,	95
" "	E. D. Jones,	Charles W. Zelgler,	96
" "	Martin Loftus,		
" "			97

TABLE No. 6.—*Showing the condition of ventilation in all the collieries in the Eastern (or Scranton) District of Luzerne and Carbon counties, now including all of Lackawanna and a portion of Wayne and Susquehanna counties, Pennsylvania, for year ending 31st day of December, A. D. 1884.*

MISCELLANEOUS COAL COMPANIES.

Name of Collieries.	Local name, number, or letter of each split of air.	Mode of ventilation.	Dimensions of Fan.		Revolutions of fan per minute.	Dimensions or area of furnace grate in feet.	Height of heated columns of air in feet.	Pressure as shown by water-gauge in inches.	Amount of Ventilation per Minute.		
			Diameter in feet.	Width of face in feet.					At intake.	At face of workings.	At outlet or upcast.
Everhart Mines,	Dip gangway,	Natural,							19,520	9,840	19,655
Tompkins Mines,	Top and bottom,	Fan,	6	2½	160				7,820	5,860	
Do.	Kiddy side,	"							5,140	3,680	17,860
Do.	Dip side,	"							4,230	4,020	
Fairmount Mines,	Shaft intake,	Fan,	12	3¾	65				14,300		
Do.	Tunnel intake,	"							11,240		
Do.	Shaft gangway,	"								12,560	
Do.	Tunnel gangway,	"								9,240	26,820
Beaver Slope Mines,	Main gangway,	Natural,							6,820	2,540	7,350
Twin Shaft Mines,	Split No. 1,	Fan,	14	5	75				60,120	18,700	
Do.	Split No. 2,	"							32,000	28,840	66,120
Butler Shaft Mines,	Main gangway,	Natural,							48,000	Cave	holes.
Do.	Tunnel gangway,	"							16,800	15,600	19,200
Mosler Shaft Mines,	Split No. 1,	Fan,	14	4	70				43,650	21,600	
Do.	Split No. 2,	"							21,600	21,150	44,400
Heidelberg Shaft Mines,	Marcy vein, east,	Fan,	18	6	45				34,560	28,360	32,670
Do.	Marcy vein, west,	"							21,650	19,040	21,000
Do.	Red Ash vein,	"							36,000	30,000	36,900
Florence Shaft Mine,	East heading,	Fan,	15	4	65				33,000	27,440	
Do.	West heading,	"							19,200	16,400	59,860
Phœnix Shaft Mines,	Split No. 1,	Fan,	15	5	60				31,780	29,650	
Do.	Split No. 2,	"							11,600	10,400	60,420
Do.	Split No. 3,	"							11,760	9,480	
Stetler's Shaft Mine,	South gangway,	Fan,	12	3¾	110				21,100	19,650	21,115
Do.	North gangway,	"							18,050	15,420	17,730
Do.	Bowen's gangway,	"							17,150	15,060	16,030
Do.	Williams' gangway,	"							17,525	16,300	19,010

Do.	Jordan's gangway,	"								13,420	12,820	15,025
										87,245	79,250	88,940
Consolidated, formerly Hillside,	East gangway,	Fan,	15	4	96				15		22,320	
Do. do.	West gangway,	"								40,320	9,600	42,240
Do. Slope Mine,	Main gangway,	Furnace,				6x10	92		.2	13,860	3,600	15,400
Spring Brook Mine,	Drift at breaker,	Steam,					56			14,200	14,060	15,580
Glendale Mines,	No. 3 heading,	Natural,				6x8	48			16,200	7,520	17,100
Do.	No. 1 heading,	"								15,600	7,400	16,840
Dunn Shaft and Slope Mines,	East heading,	Fan,	15	4	80					22,360	18,690	26,430
Do. do.	South-east heading,	"								19,180	15,240	22,310
Sibley Shaft Mines,	Top vein,	"	15	4	90					32,300	13,950	33,700
Greenwood Shaft, Slope, and Tunnel,	No. 12 drift,	Furnace,				8x9	60			9,720	7,060	18,240
Do. do.	Tunnel No. 11,	Furnace,				8x10	60			20,600	8,540	16,400
Do. do.	Slope No. 1,	Furnace,				8x10	58			15,000	11,520	22,884
Do. do.	Shaft, east heading,	Fan,	14	4	100					21,200	8,500	11,300
Do. do.	Shaft, west heading,	"								26,000	15,100	26,250
National Shaft Mines,	Slope gangway, east,	Fan,	14	3½	120					34,632	11,880	71,280
Do.	Slope gangway, west,	"									12,650	
Do.	No. 3 vein,	"									8,136	
Do.	Shaft gangway, east,	"								34,650	14,580	
Do.	Shaft gangway, west,	"									18,360	
Meadow Brook Tunnel Mine,	Upper counter,	Furnace,				8x8	60			20,880	19,440	22,680
Do. do.	Lower gangway,	Furnace,				6x6	80			22,320	20,160	22,680
Meadow Brook Shaft Mines,	Two L. gangw's, east,	Fan,	14	3½	100					32,130	15,600	65,660
Do. do.	Main gangway & counter, east,	"									14,880	
Do. do.	Counters, h'd of plane,	"								32,760	21,330	
	W. gang'y from shaft,	"									8,160	
Amity Shaft Mines,	East side of shaft, T. V.										12,600	
Do.	West side of shaft, T. V.	Fan,	25	8	40					42,160	20,928	43,180
Do.	East side of shaft, B. V.										2,555	
Do.	West side of shaft, B. V.										3,307	
Bridge Shaft and Slope Mines,	G. vein,									29,200	25,146	30,850
Do. do.	Rock Vein, No. 1,	Fan,	14	3½	76					29,635	25,300	30,850
Do. do.	Rock Vein, No. 2,									12,120	11,685	13,075
Mt. Pleasant Mines,	Slope and drift,										11,200	
Do.	Rock tunnel,	Fan,	14	4	80				.5	25,500		26,100
Do.	Straight heading,										13,600	
Capouse Mines,	B,								1′	15,400	15,840	16,800
Do.	C,									18,900	21,000	24,480
Do.	E,									18,900	18,200	19,250
Do.	G,	Fan,	9¼	2½	110				1′	19,000	16,800	19,200
Do.	I,	Fan,	20	4	75				1	21,000	18,720	21,600
Do.	K,									14,000	14,400	14,280
Do.	L,									28,800	33,600	35,910
Pine Brook Mines,	A,									29,980	28,800	34,780
Do.	B,									88,200	49,920	94,640
Do.	C,	Double fan,	17½	4	72					35,520	35,420	35,640
Do.	D,				Clark vein old workings.							50,160

TABLE No 6—*Continued.*

MISCELLANEOUS COAL COMPANIES—*Continued.*

Name of Collieries.	Local name, number, or letter of each split of air.	Mode of ventilation.	Dimensions of Fan		Revolutions of fan per minute.	Dimensions or area of furnace grate in feet.	Height of heated columns of air in feet.	Pressure as shown by water-gauge in inches.	Amount of Ventilation per Minute.		
			Diameter in feet.	Width of face in feet.					At intake.	At face of workings.	At outlet or upcast.
Fair Lawn Slope Mines,	Clark vein,	Fan,	14	4	65				42,600	33,420	45,600
Do.	Lower vein,									20,260	
Green Ridge Slope Mine,	No. 1 N. heading,								8,140	7,225	8,240
Do.	No. 2 S. heading,								9,655	7,940	9,820
Do.	No. 3 N. heading,	Fan,	12	3	117				10,110	8,950	10,240
Do.	No. 3 S. heading,								11,440	9,835	11,560
Do.	No. 3 E. heading,								10,960	8,450	11,040
Spencer Shaft Mine,	Main gangway,	Fan,	14	4	75				22,980	22,360	23,240
Lucas Shaft Mine,	East side of shaft,									17,622	
Do.	East side of slope,	Fan,	12	4	110				80,000	18,400	85,672
Do.	West side of slope,									16,520	
Richmond Mine,	One current,	Fan,							9,750	3,600	10,500
Pancoast Shaft Mine,	Diamond vein,									21,891	
Do.	Slope Clark vein,									16,990	
Do.	Clark vein,	Fan,	15	5	60				59,387	8,440	60,172
Do.	Split No. 4,									6,560	
Jermyn No. 4 Shaft,	William Clark,	Fan,	20	5	64				40,380	16,720	
Do.	John Houke,								55,380	14,780	
Do.	Thomas Alsop,									12,890	
Do.	John Nicholson,									7,843	100,120
Lackawanna Coal Company Shafts,	North heading, No. 1,	Fan,	20	5	56				15,260	12,358	15,000
Do. do.	South heading, No. 2,								14,760	11,600	14,760
Do. do.	West heading, No. 3,								13,800	10,122	13,990
Grassy Island Shaft,	North split,	Fan,	15	3½	90				42,000	18,000	
Do.	South split,									15,000	42,300
Filer's Slope Mine,	North-east heading,	Fan,	14	4½	90				43,000	16,420	
Do.	West heading,									17,200	43,470
Dolph Mine,	One current,	Furnace,				5x 6	45		10,800	7,640	10,960
Pierce Mines,	Tunnel split,	Fan,	16	4½	75				55,960	31,680	
Do.	Shaft split,									18,440	85,500
Eaton Mines,	No. 1 drift,	Fan,	14	3½	70				17,720	12,960	20,880
Do.	Shaft,	Fan,	14	3½	70				32,400	28,000	33,120

Do.	Ridge drift,	Furnace,				6x 8	86		23 040	14,400	22,500
Edgerton Mines,	Big heading,								24,384		
Do.	Nealon's heading,									7,200	
Do.	Honeg's heading,	Furnace,				6x 9	140			8,150	25,170
Do.	No. 2 heading,									6,190	
Erie Shaft Mines,	Plane,	Fan,	17½	4	62			.75	17,160	12,000	
Do.	Slope,								41,100	13,440	78,250
Keystone Tunnel Mines,	Main current,	Furnace,				6x10	88	.25	22,680	15,190	25,620
Forest City Shaft Mines,	North split,	Fan,	16	4	70			.50	18 620	8 856	45,720
Do.	South split,								25,704	10,530	
Belmont Mines,	Main current,	Fan,	6	3	280				16,480	6 940	18 320
Brennan's Mines,	Main current,	Furnace,				4x 6	42		6,300	4,200	6,450

PENNSYLVANIA COAL COMPANIES.

No. 8 Breaker,	Shaft No. 1,	East heading,	Fan,						4,170	4,170	21,600
		West heading,	Fan,	17½	5	60			16,225	14,000	
	Shaft No. 8,	East heading,	Fan,						16,950	15,000	37,860
		West heading,	*Fan,						19,600	16,800	
† Eagle Shaft,			Fan,	18	4						
Shaft No. 4,	14-foot vein,	West,	Natural,						11,760	10,920	14,700
	Marcy Vein,	East,	Fan,	17	4½	70			11,310	12,000	29,120
		West,	Fan,						14,560	13,320	
No. 6 Breaker,	Shaft No. 5,	West plane,	Fan,						28,000	16 000	30,240
		West level,	Fan,	17½	5	65				9,500	
		East plain,	Fan,						14,000	8,000	8,855
		East level,	Natural,						6,000	5,000	6,430
	Shaft No. 6,	West side,	‡ Fan,						10,500	8,000	17,500
		East side,	Steam,						9,360	4,000	9,000
		Bottom lift,	Steam,						12,000		10,800
		Donahue's heading,	Steam,						6,600	3,500	6,000
	Shaft No. 11,	West level,	‡ Fan,						21 000	15,000	28,000
		East plane,	Fan,	17½	5	60			11,000	7,000	10,000
		East level, Marcy,	Fan,						10,710	7,200	10,920
Shaft No. 7,		Reynold's heading,	Fan,	17½	5	84			12,220	10,864	42,470
		Slope,	Fan,						21,500	20,340	
No. 10. Breaker,	Shaft No. 9,	A,	Fan,						20,000	15,700	67,320
		B,	Fan,	17½	5	60			16,700	14,100	
		C,	Fan,						19 300	15,100	
		D,	Fan,						7,500	4 000	
	Shaft No. 10, 7-foot vein,	Chamberlain's head'g,	§ Fan,						10,000	4,200	11,400
	Shaft No. 10, 14-foot vein,	Richmond's heading,	§ Fan,						15,050	6,000	15,300
	Shaft No. 10, Marcy vein,	McGarra's heading,	Fan,						12,220	11,340	82,320
		West heading,	Fan,						15,400	13,800	
		Walsh's heading,	Fan,	17½	5	71				14,525	
		East heading,	Fan,						16,100	14,200	
		East plane heading,	Fan,						17,160	15,300	
		Cowan's heading,	Fan,						13,400	12,180	

* At Shaft No. 1. † Not working. ‡ At Shaft No. 5. §At Marcy vein.

TABLE No. 6—*Continued.*

MISCELLANEOUS COAL COMPANIES—*Continued.*

Name of Collieries.	Local name, number, or letter of each split of air.	Mode of ventilation.	Dimensions of Fan.		Revolutions of fan per minute.	Dimensions or area of furnace grate in feet.	Height of heated columns of air in feet.	Pressure as shown by water-gauge in inches.	Amount of Ventilation per Minute.		
			Diameter in feet.	Width of face in feet.					At intake.	At face of workings.	At outlet or upcast.
Central Breaker, Shaft No. 12,	West side,	Natural,	....	...	...	....	....	...	14,100	14,100	15,600
Shaft No. 12,	West heading,	Fan,	17½	5	60	....	....	....	15,540	9 780	54,864
Shaft No. 13,	East heading,								29,120	18,655	
Law Shaft,	East level,								14,000	9 600	
	West level,	Fan,	17½	5	60	....	....	....	19,600	12 240	64,800
	East slope,								10,000	8,200	
	West slope,								10 800	9,660	
Slope No. 2,	A,	Steam,							10 260	10,160	30 030
Slope No. 4,	A,	Natural,							13,125	9,945	14,784
	East heading,	Fan,*							7 238	7,640	18,300
	West heading,	Fan,*							12,950	9 945	
Tunnel No. 1,	North-west heading,	Steam,							19 380	12 300	21,000
	South-west heading,	Steam,								15,000	
Barnum Breaker, No. 1, 7-foot vein,	East.								18,400	18,400	38,700
	West,								19 750	18,900	
No. 1, Marcy vein,	East,								14,800	13,680	28,900
	West,	Fan,	17½	5	50	....	....	....	13,440	12,870	
No. 1, 14-foot vein,	East,								15,700	14,000	37,000
	West,								19 500	18,900	
	East,								12,000	12 000	
No. 2, 7-foot vein,	West,	Fan,	17½	5	50	....	....	....	15,800	15,800	33,000
	East,								12 800	12,860	34,950
No. 2, 14-foot vein,	West,								20,000	20,000	
Old Forge Shaft,	East,	Fan,	17½	5	40	....	....	....	30,190	27,000	31,760
	West,								20,496	11,235	21,800
DUNMORE DIVISION.											
Shaft No. 2,	Top vein,	Furnace,				4¼ x 6	150		20,748	14,580	21,700
Shaft No. 2,	Bottom vein,	Natural,							8,950	6,500	8,950

Shaft No. 3,	Top vein,	Fan,	17½	5	70				10,080	9,360	10,200	
Shaft No. 3,	Middle vein,								14,400	13,300	15,000	
Shaft No. 4,	Bottom vein, S. W. side								19,800	18,900	20 300	
Shaft No. 4,	Bottom vein, N. E. side								10,200	9,600	10,500	
Shaft No. 5,	First vein, S. W. side,	Fan,	17½	5	55				13 980	9,050		
Shaft No. 5,	First vein, N. E. side,								10,740	7,700	23,120	
Shaft No. 5,	Second vein, S. W. side,								9,840	8,400		
Shaft No. 5,	Second vein, N. E. side,								10,200	8 700	21,000	

DELAWARE, LACKAWANNA AND WESTERN.

No. 2 Shaft Diamond,	John Meredith,	Fan,	14	4	100			.8	85,641	9,504	
Do. do.	David Richards,							.8		27,755	
Do. do.	Stephen Evans,							.8		17,982	
Do. do.	Morgan Morgans,							.8		23,844	89,460
Tripp Slope, E. vein,	John D. Jones,	Fan,	14	4	100			.8	21,000	10,140	
Do. do.	David Hughes,							.8		10,400	22,750
									106,644	99,625	112,210
Tripp Shaft, Clark vein,	South-east,	Fan,	14	4	60			.2	83,000	42,720	
Do. do.	North-west,							.2		40 444	85,533
									83,000	83 164	85 536
Hampton Shaft, E. and F. veins,	William J. Jones,	Fan,	14	4	122			.9	45,920	18,780	
Do. do.	William Hughes,							.9	19,548	15,576	
Do. do.	Isaac Griffith,							.9	20,035	9,768	
Do. do.	Rock, west,							.9		12,480	73,164
Do. do.	John Griffiths,							.9		14,310	28,980
									85,503	70,914	102,144
Bellevue Shaft,	J,	Fan,	14	4	100			.6	33,300	16,285	
Do.	A,							.6	50,382	15,117	91,105
Do.	B, V,							.6		8,550	
Do.	H,							.6		14,220	
Do.	No. 1, D,							.6		8,610	
Do.	No. 2, D,							.6		5,850	
									83,682	68,632	91,105
Bellevue Slope,	J, H, F,	Fan,	14	4	100			.3	51,200	19,040	60,300
Do.	G, E,							.3		21,490	
Do.	A,							.3		7,370	
									51,200	47,900	60,300

* At No. 5 Shaft.

TABLE No. 6—*Continued.*

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY—*Continued.*

NAME OF COLLIERIES.	Local name, number, or letter of each split of air.	Mode of ventilation.	DIMENSIONS OF FAN.		Revolutions of fan per minute.	Dimensions of area of furnace grate in feet.	Height of heated columns of air in feet.	Pressure as shown by water-gauge in inches.	AMOUNT OF VENTILATION PER MINUTE.		
			Diameter in feet.	Width of face in feet.					At intake.	At face of workings.	At outlet or upcast.
Scranton Shaft, Clark vein,	A,	Fan,	14	4	130			.9	75,960	12,699	76,206
Do.	B,	"						.9		15,582	
Do.	C,	"						.9		15,600	
Do.	D,	"						.9		20,016	
Do.	E,	"						.9		3,350	
									75,960	67,227	76,206
Continental Shaft,	Pat. Hogan,	Fan,	12	$3\frac{1}{2}$	128		1		50,610	19,280	107,926
Do.	William E. Rees,	"							53,550	15,471	
Do.	Morgan Morgans,	"								13,978	
Do.	William Hughes,	"								18,200	
Do.	Charles Combe,	"								19,080	
Do.	Pat. Cannon,	"								13,515	
									104,160	99,524	107,926
Oxford Shaft,	A, F,	Fan,	14	4	100			.8	124,320	28,200	125,580
Do.	B,	"								30,240	
Do.	C,	"								28,800	
Do.	D,	"								36,630	
									124,320	123,870	125,580
Taylor Shaft,	J,	Two fans,	14	4	120				22,560	22,080	
Do.	R,	"							26,775	21,120	
Do.	B,	"							22,560	21,120	
Do.	G,	"							19,360	18,920	

Do.	H,	"								19,680	17,850	156,400
Do.	Bottom vein,	"								15,000	15,000	15,000
										125,935	116,090	171,400
Taylor Drift,	M,	Fan,	12	3½	85					35,100	28,900	38,505
Dodge Shaft,	B,	Two furnaces,				96	330	.3		30,310	18,200	
Do.	C,	"						.3		23,219	17,352	
Do.	E,	"						.3		26,970	19,803	
Do.	F,	"						.3		15,500	18,990	73,500
Do.	H,	"						.3		22,680	16,368	29,232
Do.	R, Y, A,	"						.3			15,974	13,520
Do.	S,	"						.3			15,660	24,682
										118,739	122,347	140,934
Hyde Park Shaft,	Henry Jones,	Two furnaces,				96				55,380	15,800	84,375
Do.	R. T. Edwards,	"								28,612	9,920	
Do.	Lewis Mosier,	"									11,745	
Do.	William Carpender,	"									6,885	
Do.	Henry Thomas,	"									16,380	
										83,992	60,730	84,375
Central Shaft,	West Side,	Two fans,	14	4	130				1 1/10	15,840	13,860	
Do.	Pat. Hart,	"	12	3′ 8″	115				1	81,664	13,464	
Do.	Frank Manghan,	"							1	17,570	11,222	
Do.	William Beddow,	"							1	17,856	6,955	
Do.	Anth. Timlin,	"							1	17,340	19,680	
Do.	Morgan Edwards,	"							1		16,801	
Do.	Locomotive,	"							1		14,784	36,540
Do.	John Lanahan,	"							1		17,204	53,369
Do.	Rock vein,	"							1		7,200	58,254
Do.	Rock vein,	"							1		8,366	20,080
										150,270	129,539	168,243
Archbald Shaft,	Rock vein,	Fan,	12	3¼	140					44,671	19,968	20,020
Do.	A,	"								35,491	19,488	
Do.	C,	"								19,412	16,725	
Do.	E,	"									14,322	
Do.	F,	"									14,308	
Do.	H,	"									9,243	81,528
										99,574	94,054	104,548
Cayuga Shaft,	George Burch,	Fan,	12	3¼	134					43,776	25,410	
Do.	John Stanton,	"								33,495	13,923	45,936
Do.	Diamond vein,	"									23,280	33,880
										77,271	62,613	79,816

TABLE No. 6—*Continued.*

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY—*Continued.*

Name of Collieries.	Local name, number, or letter of each split of air.	Mode of ventilation.	Dimensions of Fan.		Revolutions of fan per minute.	Dimensions or area of furnace grate in feet.	Height of heated columns of air in feet.	Pressure as shown by water-gauge in inches.	Amount of Ventilation per Minute.		
			Diameter in feet.	Width of face in feet.					At intake.	At face of workings.	At outlet or upcast.
Sloan Shaft,	Z and H,	Fan,	12	3½	120	....	....	.7	.....	12,680	
Do.	R,	"	..	...	..	....	.....	.7	....	10,575	
Do.	A,	"	....	....	....	....	.....	.7	....	18,890	
Do.	B,	"	.....	....	....	.....	.....	.7		15,912	
Do.	C,	"	....	....	....	....	.....	.7	41,315	9,371	38,714
Do.	E,	"	....	....	..	.....	....	.7	57,924	18,710	62,944
									99,239	86,138	101,658
Pyne Shaft,	Daniel Powell,	Fan,	12	4	125	....	....	.5	....	19,818	
Do.	Frank Hares,	"	..	.	.	.....	.....	.5	.	9,090	
Do.	William Riddle,	"	....	....	....	.....	.....	.5	18,252	13,608	
Do.	James Lawless,	"	....	....	....	.....	.....	.5	32,580	20,280	
Do.	William Lawder,	"	....	.....	....	.....	.....	.5	47,520	21,616	112,736
Do.	David Day,	"	....	....	....	.....	.....	.5	12,012	8,430	15,224
Do.	Thomas Griffiths,	"	..	.....	....	.....	....	.5	8,550	5,880	8,710
									118,914	98,722	136,670
Brisbin Shaft,	Benjamin Williams,	Fan,	14	4	120	....	....	1.1	24,300	12,660	
Do.	Benjamin Williams,	"	...	...	....	.....	.....	1.1	11,140	13,440	
Do.	Thomas Cowardine,	"	....	....	....	.....	.....	1.1	58,380	13,260	
Do.	John X. Davis,	"	....	.....	....	.....	.....	1.1	.....	12,120	
Do.	John B. Davis,	"	....	....	....	.....	.....	1.1	....	15,470	
Do.	John X. Davis,	"	.....	.....	....	.....	.....	1.1	...	11,410	83,520
Do.	A. L. Starkey,	"	....	.....	...	....	....	1.1	....	9,100	15,360
									96,820	87,460	98,880
Manville Shaft,	Collier,	Fan,	20	5	76	..	....	.9	17,280	13,860	89,820
Do.	Relly,	"	15	5	Not working.		....	.9	53,460	5,320	

Do.	Straight,	"	15	5	76			.9	20,826	8,400			
Do.	Matthews,	"	15	5	76			.9		11,880			
Do.	Burns,	"	15	5	76			.9		11,700			
Do.	Fiery Hill,	"	15	5	76			.9		11,390			
Do.	Powells,	"	15	5	76			.9		16,272			
									91,566	78,822	89 820		

DELAWARE AND HUDSON CANAL COMPANY.

Coal Brook,	West, No. 1,	Fan,	17	4	100			.8	13,600	9,500			
Do.	West, No. 2,								27,800	15,600	109,200		
Do.	East, No. 1,								36,000	20 000			
Do.	East, No. 2,								20,500	13,000			
No. 1 Shaft,	No. 1 Shaft,	Fan,	17	4	75			.5	28 320	14 260	74.520		
Do.	do.	"							18,400	9 860			
No. 3 Shaft,	No. 3 Shaft,	Fan,	17	4	100			.9		15,000	28 700		
White Bridge Tunnel,	White Bridge Tunnel,	"							34,500	21,260	59,040		
Powderly Mines,	East,	Fan,	17	4	67			.4	44,800	16,200			
Do.	West,								48,000	14,200	98,600		
Do.	North,									18,100			
Jermyn, No. 1,	East,	Fan,	17	4	72			.5	15,000	9,000	107.370		
Do.	Slope,								31,000	20,400			
Do.	West,								53.000	23,400			
Jermyn, No. 2,	Slope,	Natural,							27.000		31,000		
White Oak,	Tunnel,	Furnace,				64	117		28 480	16.000	33.000		
Do.	Slope,	Fan,	17	4	36			.3	59,400	21.900	62,400		
Grassy Island,	South,	Fan,	20	5	65			.7	22 350	11.700	106,760		
Do.	Slope No. 1,								35,080	17,800			
Do.	Slope No. 2,								10,140	7.300			
Do.	North, No. 1,								34,760	12,330			
Do.	North, No. 2,									7,000			
Olyphant, No. 2,	South, No. 1,	Fan,	20	5	80			.55	15.972	14 565	192,797		
Do.	South, No. 2,								14 056	12,194			
Do.	East,								17,770	14.980			
Do.	West,								3,000	3,000			
Eddy Creek,	Slope No. 1,	Fan,							8,500	6,550			
Do.	Slope No. 2,								9,240	7,140			
Do.	Slope No. 3,								12,480	12,471			
Do.	West,								9,630	8 100			
Do.	North, No. 1,								12 870	10,736			
Do.	North, No. 2,								13,365	11,935			
Do.	East,								17,600	13,500			
Maryine Shaft, Diamond vein,	Diamond,	Fan,	20	5	80			.7	17,000	14,500	154,600		
Do. 14-foot vein,	East,								22,540	18,500			
Do.	West,								22 400	18,210			
Do.	Plane,								22,800	19,000			
Do.	Slope No. 1,								17,800	15.000			
Do.	Slope No. 2,								16,490	15,750			

TABLE No. 6—*Continued.*

DELAWARE AND HUDSON CANAL COMPANY—*Continued.*

Name of Collieries.	Local name, number, or letter of each split of air.	Mode of ventilation.	Dimensions of Fan.		Revolutions of fan per minute.	Dimensions of area of furnace grate in feet.	Height of heated columns of air in feet.	Pressure as shown by water-gauge in inches.	Amount of Ventilation per Minute.		
			Diameter in feet.	Width of face in feet.					At intake.	At face of workings.	At outlet or upcast.
Leggitt's Creek, Diamond vein,	North,	Fan,	20	5	81			.65	12,300	12,200	
	East,								12,400	12,300	
Leggitt's Creek, 14-foot vein,	East, No. 1, south side,								10,935	10,600	
	East, No. 2, south side,								12,600	12,420	
	South, south side,								13,400	13,220	163,100
	River, south side,								8,200	8,200	
	East, north side,								12,220	12,000	
	West, north side,								11,640	11,502	
	North, north side,								12,840	12,900	
Von Storch, Diamond vein,	Plane,	Fan,	17	4	100			.75	11,500	9,700	
	Rock heading,								7,800	6,900	
Von Storch, 14-foot vein,	Foot heading, No. 1,		3						33,500	11,700	50,300
	Foot heading, No. 2,									16,700	
Von Storch, Clark vein,	North heading,								13,700	11,200	
	North, No. 1,	Fan,	20	5	80			.6	43,700	10,400	74,200
	North, No. 2,									31,600	
	South,								25,600	20,600	

NOTE.—There are 83 fans, 17 furnaces, 3 steam jets, and 10 mines ventilated by natural means.

TABLE No. 6—*Continued.*

MISCELLANEOUS COAL COMPANIES—*Continued.*

NAME OF COLLIERIES.	Dimensions of place where air was measured at intake in feet.	Dimensions of place where air was measured at face of workings in feet.	Dimensions of place where air was measured at outcast.	Condition of ventilation.	Velocity of air at intake in feet per minute.	Velocity of air at face of workings in feet per min.	Velocity of air at outcast in feet per minute	Number of persons working in each split.	Number of horses and mules in each split.	Dimensions of intake in feet.	Dimensions of outcast in feet.	Remarks.
Everhart Mines,	96	64	90	Good,	204	154	218	. . .	. .	96	90	
Tompkins Mines,	60	40	. . . . .	Fair,	130	146		. . .	. . .	. . .	. . . . .	Quit work in October.
Do.	42	38	50	"	223	197	357	. . .	. .	60	50	
Do.		36		"		112						
Fairmount Mines,	48	. . . . .	. . . . .	Good,	298	. . .	. . .	107	. . .	156		
Do.	108	. . . . .	. . . . .	"	104	.	. . .	23				
Do.	. . . . .	42	. . . . .	"	. . .	299						
Do.	. . . . .	38	60	"	.	243	447	. .	. . .	. . . .	60	
Beaver Slope Mines,	48	30	36	Fair,	142	85	204	14	. .	48	36	Abandoned in March.
Twin Shaft Mines,	180	36	. . . . .	Good,	334	519		48	6	180		
Do.	. . . . .	42	90	"	. . .	687	734	50	9	. . . .	90	
Butler Shaft Mines,	No meas	urement.	. . . .	"	. . .	. . .		41	4	120	Not known	Cave holes.
Do.	48	56	72	"	350	278	266	50	8	48		
Mosier Shaft Mines,	90	90	90	"	485	240		62	. . .	120		
Do.	90	90	66	"	240	235	673	50	. . .	. .	90	
Heidelberg Shaft Mines,	. . . . .	. . . .	. . . . .	"	.	.	. .	68	14	360		
Do.	360	. . . . .	. . . . .	"	256	. . .	.	52	8			
Do.	. . . . .	. . . . .	144	"	.	. .	650	39	2	. . .	144	
Florence Shaft Mine,	200	. . . . .	. . . . .	"	165	. .	. .	30	3	200	. . . . .	Breaker burned down in August.
Do.	. . . . .	. . . . .	. . . . .	"	.	.	499	38	5	. .	120	
Phœnix Shaft Mines,	. . . . .	60	. . . . .	"	.	494	. .	78	10	100		
Do.	90	72	. . . . .	"	612	144		6	1			
Do.	. . . . .	66	80	"	.	144	755	12	2	. .	80	
Stetler's Shaft Mine,	150	91	. . . . .	"	581	218	. .	50	8	70		
Do.	. . . . .	70	. . . . .	"	.	220	. .	48	6	70		
Do.	. . . . .	66	. . . . .	"	. . .	230	. .	50	7			
Do.	. . . . .	66	. . . . .	"	. .	246	.	48	4			
Do.	. . . . .	60	110	"	. .	214	809	50	6	. . . .	90	
								246	31			

TABLE No. 6—*Continued.*

MISCELLANEOUS COAL COMPANIES—*Continued.*

NAME OF COLLIERIES.	Dimensions of place where air was measured at intake in feet.	Dimensions of place where air was measured at face of workings in feet.	Dimensions of place where air was measured at outcast.	Condition of ventilation.	Velocity of air at intake in feet per minute.	Velocity of air at face of workings in feet per min.	Velocity of air at outcast in feet per minute.	Number of persons working in each split.	Number of horses and mules in each split.	Dimensions of intake in feet.	Dimensions of outcast in feet.	Remarks.
Consolidated, formerly Hillside,	. . . . .	72	. . . . .	Good,	.	310	. .	75	3			
Do. do.	96	40	96	"	420	240	440	48	5	120	100	
Do. Slope Mine,	77	36	77	"	180	100	200	62	4	77	77	
Spring Brook Mine,	48	56	60	Fair,	296	251	260	59	9	48	60	
Glendale Mines,	36	30	42	"	450	257	407	60	5	40		
Do.	38	36	40	"	410	205	421	40	3	. .	42	
Dunn Shaft and Slope Mines,	98	96	. . . . .	Good,	228	195		75	6	70	50	
Do. do.	98	96	100	"	196	160	487	73	5	70	50	
Sibley Shaft Mines,	90	42	70	"	359	332	481	130	12	90	70	
Greenwood Shaft, Slope, and Tunnel,	65	36	70	Fair,	150	196	260	68	5	65	70	Outlet in cave holes.
Do. do.	70	60	60	"	237	142	273	58	5	70	60	Air controlled by cave holes to surface.
Do. do.	112	60	84	"	134	192	272	80	15	112	84	
Do. do.	60	40	. . . . .	Good,	353	212		35	2	60	108	
Do. do.	60	40	108	"	433	380	243	31	3	60	108	
National Shaft Mines,	}	} 60	. . . . .	"	}	} 198	. .	17	2	}		
Do.	} 117	} 50	. . . . .	"	} 296	} 253		68	11	} 117	88	
Do.	}	} 72	88	"	}	} 113	810	30	3	}		
Do.	}	} 60	. . . .	"	}	} 243	. .	21	2	}		
Do.	} 198	} 72	. . . .	"	} 175	} 255	. .	18	1	} 198		
Meadow Brook Tunnel Mine,	48	72	36	"	435	270	630	30	6	48	36	
Do. do.	72	72	36	"	310	280	630	62	11	72	36	
Meadow Brook Shaft Mines,	}	} 80	}	"	}	} 195	}	} 50	4	}	}	
Do. do.	} 63	} 80	}	"	} 510	} 186	}	} 65	10	} 63	}	
Do. do.	}	} 90	} 70	"	}	} 237	} 938	} 80	12	}	} 70	
Do. do.	} 168	} 80	}	"	}	} 102	}	} 31	4	} 168	}	
Amity Shaft Mines,	80	. . . . .	. . . . .	"	170	. . .	. .	24	6			
Do.	96	. . . . .	. . . . .	"	218	. . .	. . .	43	3			
Do.	} 140	}		"								
Do.	} 17½	}	. . . . .	"	301	. . .	. . .	12	. . .	140		
Do.	17½	. . . . .	96	"	. . .	. . .	450	12	. .	. . . .	100	

Bridge Shaft and Slope Mines,		66		Good,		381		46	8		
Do. do.	80	64	98	"	887	395	763	48	14	80	98
Do. do.		36		"		324		41	2		
Mt. Pleasant Mines,	112	60	81	Fair,	227	187	421	35	26	112	81
Do.		64		"		213		153	5		
Capouse Mines,	70	88	84	Good,	220	180	200	44	2		
Do.	126	105	72	"	150	200	340	50	10		
Do.	70	70	70	"	270	260	275	50	12		
Do.	70	84	192	"	280	200	100	50	11	280	170
Do.	210	78	54	"	100	240	400	50	10		
Do.	70	96	84	"	200	150	170	50	11		
Do.	72	84	189	"	400	400	190	50	12		
Pine Brook Mines,	86	91	150	"	349	317	232	46	3		
Do.	100	90	110	"	882	555	860	46	3	140	140
Do.	112	112	110	"	317	317	323	4	1		
Do.			90	"			557				
Fair Lawn Slope Mines,	72			Fair,	592			100		72	
Do.		36		"		563	524	46			87
Green Ridge Slope Mine,	72	66	55	"	113	110	150	51	7		
Do.	66	72	98	"	146	110	100	76	6		
Do.	75	60	60	"	135	149	170	68	7	84	80
Do.	84	88	63	"	136	112	183	58	9		
Do.	66	74	58	"	166	114	190	56	7		
Spencer Shaft Mine,	60	45	72	Good,	383	497	325	156	17	152	80
Lucas Shaft Mine,		90		"		195		70	6		
Do.	120	48	80	"	667	383	1,071	74	8	120	80
Do.		56		"		295		66	6	42	
Richmond Mine,	42			"	232		105	57	4		100
Pancoast Shaft Mine,		36		"		608		60	8		
Do.	171	34	124	"	347	499	485	30	1	100	80
Do.		36		"		234		10	6		
Do.		35		"		187		13	8		
Jermyn, No. 4, Shaft,	51	60		"	792	278		42	5	100	1
Do.	128	71		"	433	780		45	6		
Do.		62		"		208		45	6		
Do.		70	96	"		112	1,043	12	2		100
Lackawanna Coal Company Shafts,	140	84	100	"	109	147	150	78	8	140	
Do. do.	72	60	72	"	205	193	205	76	8		
Do. do.	70	77	100	"	197	132	140	73	7		100
Grassy Island Shaft,	126	60		"	333	300		154	15	126	
Do.		60	96	"		250	441	79	9		96
Filer's Slope Mine,	87	42		Fair,	494	391		100	11	87	72
Do.		60	72	"		286	604				
Dolph Mine,	42	36	64	Good,	257	212	171	56	6	42	64
Pierce Mines,	50	46		"	1,119	688		170	18	50	
Do.	50	36	64	"		510	1,336			50	64
Eaton Mines,	72	72	72	"	246	180	290	64	20	72	100
Do.	72	72	72	"	450	385	460	17	2	180	100
Do.	72	72	72	"	320	200	500	83	6	84	144
Edgerton Mines,	140			"	174					142	
Do.		90		"		80		63	6		
Do.		154		"		52		31	2		

TABLE No. 6—*Continued.*

MISCELLANEOUS COAL COMPANIES—*Continued.*

NAME OF COLLIERIES.	Dimensions of place where air was measured at intake in feet.	Dimensions of place where air was measured at face of workings in feet.	Dimensions of place where air was measured at outcast.	Condition of ventilation.	Velocity of air at intake in feet per minute.	Velocity of air at face at workings in feet per min.	Velocity of air at outcast in feet per minute.	Number of persons working in each split.	Number of horses and mules in each split.	Dimensions of intake in feet.	Dimensions of outcast in feet.	Remarks.
Edgerton Mines,	.....	77	96	Good,		80	263	25	2	....	102	
Erie Shaft Mines,	120	120	....	"	143	100		61	11			
Do.	98	84	50	"	450	160	1,565	163	25	130	100	
Keystone Tunnel,	60	49	42	"	378	310	610	135	16	72	100	
Forest City Shaft Mines,	36	54	60	"	199	161	762	44	6	210	160	
Do.	102	54		"	252	195		97	14			
Belmont Mines,	90	34	64	Fair,	183	201	286	92	12	112	64	
Brennan's Mines,	42	36	36	"	150	117	180	40	4	42	36	

PENNSYLVANIA COAL COMPANY.

No. 8 Breaker,	Shaft No. 1,	5½ x 6	5½ x 6	8.4 x10	Good,	130	130	257	7	1	10x12	6½ x10	
		6 x10½	8 x 8½		"	250	206		72	6			
	Shaft No. 8,	6½ x12	7 x10	8.4 x10	"	226	244	451	64	8	9½x14½	6½ x10	
		6 x10	6 x10		"	302	280		55	6			
Shaft No. 4,	14-foot vein,	7 x12	7 x12	7 x14	"	140	130	150	19	4	7 x12	7 x14	
	Marcy vein,	6 x13	6 x10	7 x13	"	145	200	320	45	5	6 x13	5 x10	
		7 x16	6 x12		"	130	185		57	7	7 x16		
No. 6 Breaker,	Shaft No. 5,	6 x12	6 x11	5 x 7	"	390	242	864	31	5	6 x12	3¾ x 9½	
			5 x 8				236		25	7			
		5 x11	6 x 6	5 x 7	"	254	132	253	23	2	9½x10½	5 x 7	
		7 x10	4 x10	5 x 9	"	85	125	142	20	3	9½x10½	5 x 9	
		7 x10	8 x10	7 x 5	"	150	100	500	37	6	7 x10	5 x 7	
	Shaft No. 6,	6 x12	4 x10	5x10 & 4x10	"	130	100	100	25	4	6 x12	5x10 & 4x10	
		6 x10		9 x12	"	200		100	26	5	6 x10	9 x12	
		6 x10	3½ x10	6 x10	"	110	100	100	36	5	6 x10	6 x10	
	Shaft No. 11,	6 x10	6 x11	6 x12	"	350	227	390	21	4	6 x16	6 x12	
		6 x 7	5 x 8	4 x 8	"	262	175	312	18	3	6 x 7	12½ x 9½	
		7 x 9	6 x10	6 x 7	"	170	120	260	5	1	9½x10½	12½ x 9½	
Shaft No. 7,		6 x16	7 x18	10 x14	"	130	194	303	33	7	10x10.4	10 x14	
		7 x12½	5 x12			250	339		83	14			

No. 10 Breaker, Shaft No. 9,	8 x12	8½ x10	8 x11	"	208	185	765	19	9	6 x 6	6 x10
	6¼ x12	6¼ x12		"	223	188		42	4	10 x12	
	6 x13	6 x13		"	247	193		47	6		
	6 x10	5 x10		"	125	80		20	3	5 x 6	
Shaft No. 10, 7-foot vein,	5 x10	5 x 6	3 x 4	"	200	140	950	22	6	10 x10⅓	6 x12
Shaft No. 10, 14-foot vein,	7 x10	6 x 8	6 x10	"	215	125	255	24	5	10 x10½	6 x12
Shaft No. 10, Marcy vein,	6½ x 8	5 x 9	7 x12	"	235	252	980	24	4	6 x10	6 x12
	7 x11	5⅞ x 8		"	200	390		21	2	6 x10	
		5 x 7				415		14	2	6 x10	
	6¼ x 8	5 x 8		"	322	355		36	5	12 x12	
	6 x11	5 x12		"	260	255		32	4	12 x12	
	1⅔ x 6	5 x 6		"	1,340	406		32	3	12 x12	
Central Breaker, Shaft No. 12,	6 x10	6 x10	8 x10	"	235	235	195	50	7	10 x12	8 x10
Shaft No. 12,	7 x10	6 x10	9 x12	"	222	163	508	6	1	12 x12	6 x12
Shaft No. 13,	7 x13	6⅓ x10		"	320	285		46	11		
Law Shaft,	7 x10	6 x10	9 x10	"	200	160	720	36	5	12 x12	5½ x12
	8 x10	6 x10		"	245	204		40	4		
	8 x10	6 x10		"	125	136		16	2		
	8 x10	6 x10		"	135	160		22	2		
Slope No. 2,	9 x12	8 x10	6 x11	"	95	127	455	40	17	9 x12	7¼ x12
Slope No. 4,	5 x 7	5 x 9	4 x 6	"	375	221	616	28	5	8 x 8	10 x12
	7 x11	5 x 8	5 x10	"	94	191	366	33	3	7 x11	3¾ x 9½
	5 x 7	5 x 9		"	370	221		38	3	5 x 7	
Tunnel No. 1,	4 x 7	5 x12	7 x10	"	303	205	300	32	5	6 x 8	7 x10
	6 x 8	5 x12		"	227	250		45	6	6 x 8	
Barnum Breaker, No. 1, 7-foot vein,	6 x 6.9	6 x12.2	8 x12½	"	460	252	387	48	8	10 x12	8½ x12
	7 x10	7 x12		"	282	225		48	7		
No. 1, Marcy vein,	7 x14	6 x12	7 x12	"	151	190	344	8	1	10 x12	8½ x12
	7 x12	6 x12½		"	160	165		9			
No. 1, 14-foot vein,	6 x12	6 x12	6 x12.4	"	218	200	500	48	6	10 x12	8½ x12
	6 x10	7 x12		"	325	225		48	7		
No. 2, 7-foot vein,	6 x11½	6 x11½	6 x14	"	174	174	393	27	3	10 x12	8½ x10
	6 x11	6 x11		"	239	239		18	2		
No. 2, 14-foot vein,	7 x12½	7 x12½	6 x12½	"	147	147	466	16	2	10 x12	8½ x10
	7 x12	7 x12		"	238	238		27	3		
Old Forge Shaft,	6 x12	7½ x 8	8 x12½	"	419	450	317	58	4	12 x13	10 x12
	9 x12	7½ x 8	6 x12½	"	190	187	291	191	8		

DUNMORE DIVISION.

Shaft No. 2,	84	60	62	Good,	247	243	350	95	8	30	100
Shaft No. 2,	50	50	50	"	179	130	179	9	1	100	144
Shaft No. 3,	72	60	60	"	140	155	170	46	4	72	60
Shaft No. 3,	60	70	60	"	240	190	250	68	12	60	60
Shaft No. 4,	60	70	70	"	330	270	290	102	14	60	60
Shaft No. 4,	60	80	70	"	170	120	150	13	2	60	60
Shaft No. 5,	60	50	40	"	233	181	578	57	4	156	
Shaft No. 5,	60	50		"	179	154		18	2		
Shaft No. 5,	60	60	50	"	164	140	420	8	1		
Shaft No. 5,	60	60		"	170	145		16	2		120

TABLE No. 6—*Continued.*

DELAWARE LACKAWANNA AND WESTREN RAILROAD COMPANY.

NAMES OF COLLIERIES.	Dimensions of place where air was measured at intake in feet.	Dimensions of place where air was measured at face of workings in feet.	Dimensions of place where air was measured at outcast.	Condition of ventilation.	Velocity of air at intake in feet per minute.	Velocity of air at face of workings in feet per min.	Velocity of air at outcast in feet per minute.	Number of persons working in each split.	Number of horses and mules in each split.	Dimensions of intake in feet.	Dimensions of outcast in feet.	Remarks.
No. 2 Shaft, Diamond,	6 x18	4 x 6	. . . . .	Good,	793	396	1,065	39	5	10x14	10x11	
Do. do.	. . . . .	5 x 7	. . . . .	"	. . .	793	. . .	40	8			
Do. do.	. . . . .	6 x 9	. . .	"	. . .	333	. . .	49	8			
Do. do.	. . .	3 x 4	7 x12	"	. . .	1987	. . .	36	7			
Tripp Slope, E. veln,	6 x10	6 x 6.6	. . . . .	"	350	260	350	50	15	6x10		
Do. do.	. . . . .	8 x 6.6	. . . . .	"	. . .	200	. . .	50	14			
Tripp Shaft, Clark veln,	10 x20	8 x12	. . .	"	415	445	. . .	8	1			
Do. do.	. . .	8 x13	13½ x16	"	. . .	386	396	6	1			
Hampton Shaft, E. and F. veins,	8 x14	6 x10	. . . . .	"	410	313	. . .	66	15	9x16	6x10	
Do. do.	6 x 9	6 x11	. . . . .	"	362	236	. . .	64	11			
Do. do.	6 x 9	6 x11	. . .	"	371	148	. . .	41	6			
Do. do.	. . . . .	6½ x10	7 x12	"	. . .	192	871	24	3			
Do. do.	. . .	6 x 9	6 x10	"	. . .	265	483	48	5			
Bellevue Shaft,	6.3 x12	6⅝ x12	. . .	"	444	215		44	5	10x18	10x10	
Do.	6.2 x13	6½ x11	13¼ x 6.3	"	622	217	1,083	20	1			
Do.	. . . . .	6 x 5	. . . . .	"	. . .	285	. . .	12	2			
Do.	. . . . .	6 x10	. . . . .	"	. . .	237	. . .	29	4			
Do.	. . . . .	6 x 5	. . . . .	"	. . .	287	. . .	14	2			
Do.	. . . . .	12½ x 3	. . .	"	. . .	780		13	2			
Bellevue Slope,	8 x10	7 x 8	6.9 x10	"	640	340	900	40	4	7x13	7x10	
Do.	. . . . .	7 x10	. . . . .	"	. . .	307		40	7			
Do.	. . . . .	7 x10	. . .	"	. . .	110	. . .	18	2			
Seranton Shaft, Clark veln,	6.4 x19	3 x 3	6 x13	"	633	1411	977	20	3	7x14	12x12	
Do.	. . . . .	7 x 6	. . . . .	"	. . .	371	. . .	45	6			
Do.	. . . . .	6 x 6½	. . . . .	"	. . .	400	. . .	45	5			
Do.	. . . . .	3 x 6	. . . . .	"	. . .	1112	. . .	40	3			
Do.	. . . . .	3 x 3	. . .	"	. . .	370	. . .	3				
Continental Shaft,	21 x10	8 x10	7 x13	"	241	241	. . .	40	5	10x18	10x10	
Do.	21 x10	6 x13⅜	. . . . .	"	255	191	. . .	22	2			
Do.	. . . . .	. . . . .	. . . . .	"	. . .	241	. . .	2	2			

Do.				"		260		38	5		
Do.				"		265		36	6		
Do.				"		265		22	6		
Oxford Shaft,	8 x14	6 x10	7 x12	"	1110	470	1,495	40	7	{ 10x14 / 10x 9 }	10x13
Do.		6 x12		"				12	2		
Do.		6 x10		"				44	7		
Do.		9 x 8.3		"				48	4		
Taylor Shaft,	7.5 x13	8 x12		"	235	230		47	8		
Do.	5 x 9	8 x12		"	595	220		39	7		
Do.	7.5 x13	8 x12		"	235	220		47	6		
Do.	8 x11	8 x11		"	220	215		18	1	6x 9	
Do.	8 x12	8 x10½		"	205	210	1,700	27	2	10x16	8x12
Taylor Drift,	6 x 9	8½ x10	5 x 7	"	650	340	1,100	46	6	6x 7	8x 9
Dodge Shaft,	14.10x 5	12 x 5		"	410	260		27	7		
Do.	9 x 7.6	12 x 6		"	347	241		27	6		
Do.	11.10x 5.4	14 9 x 4.8		"	435	287		36	4		
Do.	8.8 x 7	9 x10	14 10x 6.9	"	250	211	735	18	4		
Do.	15 x 7	13 x 6.8	7 x 6.11	"	216	188	609	32	6		
Do.		14 x 7	8 x 5	"		163	338	42	6		
Do.		9 x 4	12.4 x 7	"		435	287	14	3	10x21	13x13
Hyde Park Shaft,	6 x13	8 x 5	22.6 x10	"	710	395		50	6		
Do.	8 x12	8 x 4		"	297	310		38	3		
Do.		9 x 3		"		435		34	4		
Do.		3 x 5		"		459		19	2		
Do.		7 x 9		"		260		56	6	10x14	10x12
Central Shaft,	5.9 x 7	5 9 x 9		"	396	165		20	3		
Do.	18 4 x 7	8.7 x 6		"	638	264		34	6		
Do.	7 x 5	10.4 x 6		"	502	181		7	1		
Do.	10.9 x 6	8 x 8 2		"	279	107		29	5		
Do.	10 x 6	7.6 x 8		"	289	328		32	4		
Do.		8.6 x 6 4		"		317		46	7		
Do.		10.6 x 6.2	7.10x 9	"		231	522	5			
Do.		10 6 x 8.9	9.5 x 8.10	"		187	643	46	4		
Do.		8 x10	13.4 x 5.6	"		90	798	17	3	10x14	10x 9
Do.		9.4 x 5.1	8 8 x 7	"		187	328	17	2	10x10	10x 9
Archbald Shaft,	18.2 x 7 3	7 x 4.8	2.1 x 6.3	"	341	621	1,540	38	4		
Do.	11 8 x 7.9	12 x 8		"	390	203		49	4		
Do.	11 x 8.5	6 3 x12		"	211	223		27	3		
Do.		7 x 6		"		341		30	5		
Do.		8.3 x 6		"		292		29	3		
Do.		3 x 9	10 x 7.2	"		1027	1,174	20	4	10x14	10x10
Cayuga Shaft,	8 x16	7 x10		"	342	363		50	9		
Do.	7 x11	7 x10	8 x 9	"	435	221	638	50	3		
Do.		6 x10	7 x10	"		388	484	50	5	10x14	8x10
Sloan Shaft,		5 x 8		"		317		20	3		
Do.		6.3 x 8		"		211.5		22	4		
Do.		7.6 x 9		"		282		50	8		
Do.		8 x10		"		198.9		48	6		
Do.	9 x10	6 x11	7 x10	"	459	144		21	2		
Do.	10 x12	6.3 x 8	10 x10	"	482 7	574.2		50	6	10x15	10x10
I yne Shaft,		6 x 9		"		367		47	8		
Do.		5 x 0		"		202		27	8		

TABLE No. 6 —*Continued.*

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY—*Continued.*

NAMES OF COLLIERIES.	Dimensions of place where air was measured at intake in feet.	Dimensions of place where air was measured at face of workings in feet.	Dimensions of place where air was measured at outcast.	Condition of ventilation.	Velocity of air at intake in feet per minute.	Velocity of air at face of workings in feet per min.	Velocity of air at outcast in feet per minute.	Number of persons working in each split	Number of horses and mules in each split.	Dimensions of intake in feet	Dimensions of outcast in feet.	Remarks.
Pyne Shaft,	6 x 6	6½ x10	. . . . .	Good,	507	216	. .	45	6			
Do.	6 x15	6 x13	. .	"	362	260		46	8			
Do.	10 x12	6 3x 9	7½ x14	"	396	386	1,084	44	6			
Do.	5.9x 9	5 x 6	7.4x12	"	231	281	173	29	5	10x14		
Do.	6 x15	7 x 8	3½ x 3	"	95	105	871	21	2	6x14	10x10	
Brisbin Shaft,	9 x10	6 x10	. . . . .	"	270	231		47	4			
Do.	7 x10	7 x10	. . . . .	"	202	192	. .	36	7			
Do.	7 x15	6 x10	. . . . .	"	555	221	. .	39	7			
Do.	. . . . .	6 x10	. . . . .	"	. . .	202	.	27	3			
Do.	. . . . .	7 x10	. . . . .	"	. . .	221		30	2			
Do.	. . . . .	7 x10	10 x12	"	. . .	163	696	23	3			
Do.	. . . . .	5 x10	8 x10	"		182	192	13	1	10x14	9x10	
Marvilie Shaft,	6 x 9	6½ x13	7½ x12	"	320	165	998	46	3			
Do.	6 x22	7 x 8	. . .	"	405	95	.	28	2			
Do.	6 x13	7 x12	. . . . .	"	267	100	. .	50	8			
Do.	. . . . .	5½ x12	. . . . .	"		180	. .	49	8			
Do.	. . . . .	5 x13	. . . . .	"	.	180	. . .	50	6			
Do.	. . . . .	5 x13½	. . . . .	"		170	. .	29	4	7x10		
Do.	. . . . .	6 x12	. . . . .	"	. .	226	.	44	6	10x14	7x10	

DELAWARE AND HUDSON CANAL COMPANY.

Coal Brook,	36	40	. . . .	Good,	378	237		50	5			
Do.	90	40	84	"	309	390	1 300	75	20	126	84	
Do.	50	50	. . . .	"	720	400		75	14			
Do.	63	48	. . . .	"	325	271		50	4			
No. 1 Shaft,	46	40	46	"	615	356	1,620	50	6	100	66	
Do.	36	36	. . . . .	"	510	273	. .	25	2			

No. 3 Shaft,	......	40	12	"		375	2,390	60	9	48	12
White Bridge Tunnel,	73	84	72	"	472	253	820	120	18	73	72
Powderly Mines,	55	58	.....	"	800	280		60	8		
Do.	57	47	52	"	842	600	1,900	40	4		
Do.	.....	60	...	"		300		40	5		
Jermyn, No. 1,	48	60	120	"	312	150	859	30	6	235	125
Do.	72	72	....	"	430	283		50	6		
Do.	70	70	......	"	757	334		70	10		
Jermyn, No. 2,	60	60	100	"	450		310	80	13	60	100
White Oak,	60	60	55	Fair,	473	266	600	75	16	60	81
Do.	50	54	56	Good,	1,188	405	1,114	100	6	50	100
Grassy Island,	65	62	....	"	344	188		62	7		
Do.	70	49	.....	"	500	363		55	7		
Do.	39	40	84	"	260	182	1,271	38	6	140	120
Do.	54	39	......	"	644	316		30	3		
Do.	......	40	......	"		175		17	2		
Olyphant, No. 2,	44	41	....	"	363	355	.	44	7		
Do.	58	45	.....	"	242	272	.	34	4		
Do.	64	58	.....	"	277	258	...	60	9		
Do.	40	40	......	"	75	75					
Eddy Creek,	35	27	....	"	243	246		20	2		
Do.	20	40	100	"	431	178	1,928	30	2	240	100
Do.	42	48	....	"	300	260		22	2		
Do.	27	27	......	"	345	300	..	7	2		
Do.	41	40	......	"	314	268	.	5	1		
Do.	45	26	....	"	297	459	.	14	2		
Do.	64	40	....	"	275	337	.	65	7		
Marvine Shaft, Diamond vein,	61	66	.....	"	278	220	.	38	8		
Do. 14-foot vein,	60	75	......	"	375	246	.	34	4		
Do.	60	80	.....	"	373	227	.	40	6		
Do.	66	78	...	"	345	243		42	8		
Do.	42	72	105	"	423	208	1,472	40	6	210	100
Do.	58	70	......	"	281	227	.	38	6		
Leggitt's Creek, Diamond vein,	39	60	....	"	315	203	..	26	6		
Do. 14-foot vein,	39	60	....	"	318	205	..	23	5		
Do.	81	81	.....	"	135	130	..	22	5		
Do.	78	78	....	"	161	159	.	30	6		
Do.	35	60	....	"	383	220		16	5		
Do.	6	65	140	"	1,366	126	1,165	12	4	140	90
Do.	39	80	......	"	313	150		22	5		
Do.	37	75	....	"	314	153	...	22	4		
Do.	38	76	....	"	338	170	.	22	5		
Von Storch, Diamond vein,	60	60	....	"	191	161		50	8		
Do. 14-foot vein,	49	58	49	"	159	119	1,026	30	4	100	39
Do.	72	65	.....	"	465	180		48	8		
Do.	....	70	....	"		239	.	31	4		
Do.	60	75	.....	"	228	149		49	8		
Do. Clark vein,	82	65	80	"	533	160	927	49	8	140	70
Do.	.....	72	....	"		438		40	6		
Do.	63	70	.....	"	406	327		50	8		

TABLE No. 7.—*Statistics connected with the working of Coal Mines and Collieries in the Eastern district of Luzerne and Carbon counties, now including all of Lackawanna and a portion of Wayne and Susquehanna counties, Pennsylvania, for year ending 31st day of December, A. D. 1884.*

MISCELLANEOUS COAL COMPANIES.

Names of Collieries.	Dimensions of shaft in feet.	Depth of shaft in feet.	Dimensions of slope in feet.	Length of slope in feet.	Angle of slope in degrees.	Length of plane outside in feet.	Angle of plane outside in degrees.	Length of plane inside in feet.	Angle of plane inside in degrees.	Dimensions of tunnels in feet.	Length of tunnel to coal in feet.	Number of breakers.	Number of screens and chutes.	What is the average width of chambers?	What is the average width of pillars?	What is the width of headings in feet?	What is the width of air-ways in feet?
Everhart Slope Mines,	. . . .	. . . .	8 x12	131	30	80	25	. . . .	. . . .	. . . .	. . .	1	. .	24	15	10	14
Tompkins Shaft Mines,	14 x10	180	5½x12	230	14	. . .	. . . .	. . . .	. . . .	. . . .	. . .	1	. .	24	15	12	15
Fairmount Shaft Mines,	12 x10	330	5½x18	330	10	. . .	. . . .	. . . .	. . . .	6x 6	275	1	. .	24	16	14 18	18
Fairmount Shaft Mines, air-shaft,	10 x 8	330															
Beaver Slope Mines,	. . . .	. . . .	7 x 8	200	20	. . .	. . . .	. . .	. . . .	. . . .	.	. .	1	30	18	12	12
Twin Shaft Mines,	10 x16	235	6 x15	170	26	. . .	. . . .	. . .	. . . .	. . . .	. . .	1	. .	22	18	15	15
Twin Shaft Mines, air-shaft,	10 cir.	235															
Mosier Shaft Mines,	10 x16	164	. . .	325	20	. . .	. . .	525	30	. . . .	. .	1	. .	25	16	12	16
Mosier Shaft Mines, air-shaft,	8 x 8	124															
Butler Shaft Mines,	10 x16	100	. . . .	675	25	. . .	. . . .	. . .	. . . .	6x 8	200	1	. .	24	10	12	16
Heidelburg Shaft Mines,	12 x42	124	. . . .	. . .	. . .	. . .	. . .	200	14	. . . .	. . .	. .	. .	25	20	12	12
	12 x26	350	7 x12	500	10	. . .	. . .	500	18	. . . .	. . .	1	. .	25	30	12	12
Ontario Slope Mines,	. . . .	. . . .	7 x12	500	10	500	10	. . .	. . .	. . . .	. . .	. .	. .	No ne		ope n.	
Florence Shaft Mines,	22 x10	127	. . . .	. . .	. . .	. . .	. . .	. . .	. . .	. . . .	. . .	1	. .	26	15	14	14
Phœnix Shaft Mines,	16 x18	350	. . . .	. . .	. . .	. . .	. . .	. . .	. . .	. . . .	. . .	1	. .	24	14	12	12
Phœnix Shaft Mines, air-shaft,	8 x 8	348															
Stetler Shaft Mines,	10 x28	231	7 x12	1,800	2¼ & 5	275	19	. . . .	. . . .	. . . .	. . .	1	. .	27	15	12	14
Stetler Shaft Mines, air-shaft,	10 x10	228															
Hillside Shaft, now Consolidated Mines,	22 x11	147	8 x 9	550	5	166	20	. . . .	. . . .	. . . .	. . .	1	.	26	12	14	14
Hillside Shaft, now Consolidated Mines,	20 x10	202	. . . .	. . . .	. . .	. . .	. . .	. . .	. . . .	. . . .	. . .	1	. .	26	12	14	14
Hillside Shaft, now Consolidated Mines, air-shaft,	10 x10	170															
Spring Brook Tunnel Mines,	6 x11	165	. . . .	. .	. . . .	200	19	. . .	. . . .	6x10	20	1	. .	30	12	12	12
Glendale Tunnel Mines, air-shaft,	8 x 8	65	. . . .	. .	. . . .	400	15	560	4	6x 8	50	1	. .	28	14	12	14
										7x 9	70						
Dunn Shaft Mines,	10 x24	80	7 x14	120	12	. . .	. . .	. . .	. . . .	. . . .	. . .	1	. .	28	15	11	13
Sibley Shaft Mines,	10 x26	195	7 x18	270	15	. . .	. . .	. . .	. . . .	. . . .	. . .	1	. .	30	12	12	12
Greenwood Mines,	11 x28	185	7 x18	1,200	9	. . .	. . .	. . .	. . . .	7x16	100		. .	30	9	12	12
Greenwood Mines.	. . . .	. . . .	6 x12	760	9	. . .	. . .	. . .	. . . .	6x10	250	. .	. .	28	12	12	12
National Mines, shaft and slope,	11 x27	225	7 x18	600	18 26	120	18 26	700 500	6	. . .	. . .	1	. .	27	15	16	16

Meadow Brook Shaft and Tunnel,	12 x21	155	7 x 9	200	18 26	180	18 26	850	6	6x14	220	1	. .	27	15	16	16
								900									
Amity Shaft Mines,	10 x34	250	. . . .	. . . .	. . . .	175	19	. . . .	. . .	. . . .	. .	1	. .	30	15	16	16
Bridge Shaft and Slope Mines,	11 x21	285	6½x12	885	12	75	18	750	2½	. . . .	. . .	1	. .	27	18	11	14
Mount Pleasant Slope Mine, air-shaft,	7 x10	175	8 x 9	1,200	20	300	12	300	10	7x14	300	1	. .	30	21	11	12
Capouse Shaft Mines,	10 x30	355	. . .	. . .	. . . .	261	30	1,500	5	. . . .	. .	1	. .	30	16	12	12
	10 x26	355															
Pine Brook Shaft Mines,	10 x22	287	. . .	. . . .	. . . .	. . .	. . . .	500	15	7x16	500	1	. .	24	20	12	18
	13 cir.	287															
Fair Lawn Slope Mines,	. . . .	. .	7 x10	620	19	780	19	. . .	. . . .	. . . .	. . .	1	. .	30	15	15	20
Fair Lawn Slope Mines, air-shaft,	8 x 8	175	7 x12	500	6												
Green Ridge Slope Mines, air-shaft,	8 cir.	125	7 x12	600	19	325	16	525	7	. . . .	. . .	1	. .	30	15	14	14
Spencer's Shaft Mines,	9½x16	290	4½x20	560	2	2,250	5	800	4	. . . .	. . .	2	. .	30	15	12	12
																16	
Lucas Shaft Mines, air-shaft,	10 x30	150	7 x12	1,000	6	. .	. . . .	. . .	. . . .	. . . .	. .	1	. .	25	15	12	12
	10 x14	144															
Richmond Shaft and Slope Mine. (No report.)																	
Pancoast Shaft Mines,	10 x34	240	12 x 8	600	3	. . .	. . . .	. . . .	. . . .	. . . .	. . .	1	. .	28	18	12	12
Pancoast Shaft Mines, air-shaft,	10 x20	238															
	10 x20	60	12 x 7	1,000	20												
Jermyn No. 4, Throop Shaft,	11 x24	466	6 x12	700	9												
Jermyn No. 4, Throop Shaft, supply-shaft,	10 x18	422	6 x12	500	6	. . .	. . . .	450	10	. . . .	. . .	1	. .	30	15	12	15
Lackawanna Coal Co. Shaft Mine,	10 x34	200	. . .	. . . .	. . .	. . .	. . . .	500	7	. . . .	. . .	1	. .	30	15	14	14
Lackawanna Coal Co. Shaft Mines, supply-shaft,	10 x16	204															
Grassey Island C. Co. Shaft Mine,	11 x28	175	. . .	. . . .	. . . .	224	23	600	13	. . . .	. . .	1	. .	30	15	13	14
	10 x22	110	. . .	. . . .	. . .	90	23										
Filer's Slope Mine, air-shaft,	8 x 8	100	7 x 9	450	30	250	30	600	15	. . . .	. . .	1	. .	30	12	12	12
Dolph Tunnel Mines. (New works—no report made.)																	
Pierce Coal Company's Tunnel Mines,	. . . .	. . .	7 x12	900	14	300	15	. . . .	. . .	7x10	555	1	. .	30	14	12	12
Eaton Shaft Slope and Tunnel Mines,	10 x34	156	6 x12	450	12	516	7	. . . .	. . . .	6x10	. . .	1	.	36	12	12	12
	10 x14	60	. . .	. . . .	. . .	342	12	. . . .	. . . .	6x12							
Edgerton Tunnel Mines,	. . . .	. . .	. . .	. . . .	. . . .	690	22	. . . .	. . . .	6x10	25	1	. .	28	12	12	12
Erie Shaft Mines,	10 x30	170	. . .	. . . .	. . . .	. . .	. . . .	500	6	. . . .	. . .	1	. .	30	12	12	12
Erie Shaft Mines, air-shaft,	10 x10	140															
Keystone Tunnel Mines, air-shaft,	10 x10	40	. . .	. . . .	. . . .	. . .	. . . .	950	8	6x10	140	1	. .	30	12	12	12
Forest City Shaft Mines,	10½x20	86															
Forest City Shaft Mines, air-shaft,	10 x10	32	. . . .	. . . .	. . . .	196	23¾	. . . .	. . .	. . .	. .	1	. .	30	12	14	14
Belmont Tunnel Mines,	. . . .	. . .	. . . .	. . . .	. . . .	. . .	. . . .	. . . .	. . . .	6x 6	50	1	. .	26	15	8	8
	. .	. . .	. . . .	. . . .	. . . .	. . .	. . . .	. . . .	. . . .	6x 6	45						
	. . . .	. . .	. . . .	. . . .	. . . .	. . .	. . . .	. . . .	. . . .	6x 6	40						
Brennan's Tunnel Mines,	. . .	. . .	. . . .	. . . .	. . . .	. . .	. . . .	. . . .	. . .	6x 8	60	1	. .	28	15	10	10
Totals,	54	10,922	31	18,526	.	8,495	23	12,510	20	19	2,900	42	1				

PENNSYLVANIA COAL COMPANY.

No. 8 Breaker,	Shaft No. 1,	10 x20	430	. . . .	. . . .	. . . .	. .	. . . .	. .	. . .	. . . .	. .	. . .	25	15	10½	14
	Shaft No. 8,	9½x14½	206	. . . .	. . . .	. . . .	. . .	. . .	500	8	. . . .	. .	1 4	25	15	11	14
									440	9							
									388	9½							
	Slope No. 6,	9½x14	98	Abandoned April 1, 1884.													

TABLE No. 7—*Continued.*

PENNSYLVANIA COAL COMPANY—*Continued.*

NAMES OF COLLIERIES.	Dimensions of shaft in feet.	Depth of shaft in feet.	Dimensions of slope in feet.	Length of slope in feet.	Angle of slope in degrees.	Length of plane outside in feet.	Angle of plane outside in degrees.	Length of plane inside in feet.	Angle of plane inside in degrees.	Dimensions of tunnels in feet.	Length of tunnel to coal in feet.	Number of breakers.	Number of screens and chutes.	What is the average width of chambers?	What is the average width of pillars?	What is the width of headings in feet?	What is the width of air-ways in feet?
Shaft No. 4, 14-foot vein,	$9\frac{1}{2}$x$16\frac{1}{2}$	191	7x11	742	$5\frac{1}{4}$	. .	. .	375	8	. . . .	. . .	. .	1	22	20	11	15
Shaft No. 4, Marcy vein,	$9\frac{1}{2}$x$16\frac{1}{2}$	233	. . .	. . .	. . .	. .	. .	429	6	. . . .	. . .	. .	. . .	22	20	11	15
Shaft No. 5,	$9\frac{1}{4}$x$15\frac{1}{2}$	256	. . .	. . .	. . .	. .	. .	500	9	. . . .	. . .	. .	. . .	24	16	10	15
No. 6 Breaker,								450	10								
Shaft No. 6,	$9\frac{1}{2}$x16	312	8x16	850	7	.	.	275	$7\frac{1}{2}$	. . .	. . .	1	6	22	18	10	14
Shaft No. 11,	$9\frac{1}{2}$x14	238	.	. .	. .	950	8	250	9	. . .	. . .	. .	. . .	24	16	10	15
Shaft No. 7,	$9\frac{1}{4}$x16	311	6x10	500	7	.	.	196	6	. . . .	. . .	. .	1	24	18	12	15
								350	8								
Shaft No. 9,	10 x19	140	. . . .	. . . .	. . . .	. .	. .	150	11	. . .	. .	. .	. . . .	24	15	10	15
								375	6								
								240	8								
Shaft No. 10, 7-foot vein,	12 x$27\frac{3}{4}$	100	. . . .	. . . .	. . . .	. .	. .	150	11	. . .	. .	. .	. . . .	24	14	12	15
No. 10 Breaker,								315	9								
Shaft No. 10, 14-foot vein,	12 x$27\frac{3}{4}$	159	. . . .	. . . .	. . . .	. .	. .	400	9	. . . .	. . .	1	20	24	14	12	15
Shaft No. 10, Marcy vein,	12 x$31\frac{1}{2}$	255	. . .	. . . .	. . . .	441	12	487	10	. . . .	. . .	. .	. . .	24	16	12	15
								330	$9\frac{1}{2}$								
								350	10								
Shaft No. 12,	10 x$18\frac{1}{2}$	136	7x12	275	5	230	8	220	10	. . . .	. . .	. .	1	30	15	10	15
Central Breaker,								300	10								
Shaft No. 13,	12 x$31\frac{1}{2}$	140	7x12	325	$4\frac{1}{4}$	. .	.	. .	. .	. . . .	. . .	1	20	26	16	12	15
Law Shaft,	12 x$24\frac{1}{2}$	207	7x12	525	$4\frac{1}{4}$	. . .	. .	235	$6\frac{1}{2}$	. . . .	. . .	. .	. . .	27	16	12	15
Slope No. 2,	. . . .	. .	6x10	1,010	25	. .	. .	120	8	. . . .	. . .	. .	1	24	16	10	15
Slope No. 4,	10 x12	77	7x10	640	7	520	7	. . . .	. . . .	6x 7	92	. .	1	24	16	11	15
			7x10	805	9												
Tunnel No. 1,	. . . .	. .	7x10	675	17	. . .	. .	342	10	. . . .	. . .	. .	1	24	16	12	15
								230	14								
Stark Shaft and Breaker. (Abandoned Nov. 1, 1884,)	. . .	. .	. . .	. . . .	. . . .	. . .	. .	.	. . .	. . .	. . .	1					
No. 1, 7-foot vein,	12 x47	127	. . .	. . . .	. . . .	. .	. .	245	9	. . . .	. . .	. .	. . . .	26	14	12	15
No. 1, Marcy vein,	12 x47	270	. . .	. . . .	. . . .	. .	. .	. .	. . .	. . . .	. . .	. .	. . . .	. .	. .	13	15
Barnum Breaker, No. 1, 14-foot vein,	12 x47	173	8x12	700	5	. .	. .	325	7	. . . .	. . .	1	22	24	16	12	15
No. 2, 7-foot vein,	10 x21	151	. . .	. . . .	. . . .	. .	. .	254	6	. . . .	. . .	. .	. . . .	26	14	12	15
No. 2, 14 foot vein,	10 x21	202	. . .	. . . .	. . . .	. .	. .	176	9	. . . .	. . .	. .	. . . .	24	16	12	15
Old Forge Shaft and Breaker,	12 x32	189	. . .	. . . .	. . . .	164	12	. . . .	. .	. . .	. . .	1	16	26	16	12	15
						236	10										

Eagle Shaft. (Temporarily abandoned, Oct. 11, 1884,)	10 x16	151										1						
Carbon Hill. (Abandoned.)																		
Shaft No. 14. (Sinking,)	12 x52	385																
No. 2 Breaker. (At head of No. 2 Plane, and prepares coal from mines having no breakers,)												1						

DUNMORE DIVISION.

Shaft No. 2, top vein.	12 x16	53	5x12	1,900	$3\frac{1}{2}$									30	15	12	15
Shaft No. 2, bottom vein,	12 x16	$136\frac{1}{2}$											1	30	15	12	15
Shaft No. 3, top vein,	12 x18	60	5x12	1,000	$3\frac{1}{2}$	375	12							30	15	12	15
Shaft No. 3, middle vein,	12 x18	102										1		30	15	12	15
Shaft No. 3, bottom vein,	12 x18	167												30	15	12	15
Shaft No. 4, top vein,	12 x17	50												30	15	12	15
Shaft No. 4, bottom vein,	12 x17	100						762	$3\frac{1}{2}$					30	15	12	15
Shaft No. 5, top or Clark vein,	12 x32	126	5x12	975	2							1		30	15	15	16
Shaft No. 5, 1st Dunmore vein,	12 x32	210	5x12	450	2									30	15	15	16
Shaft No. 5, 2d Dunmore vein,	12 x32	250												30	15	15	16
Shaft No. 5, 3d Dunmore vein,	12 x32	300												30	15	15	16
Dunmore Screens,												1					
No. $6\frac{1}{2}$ Breaker, Dunmore,												1					
Total Pennsylvania Coal Company,	24	5,080	15	11,372		2,916	7	10,159	31	1	92	13	7				

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY.

Diamond, No. 2 Shaft,	10x36 10x17	223 385	15x 6	148	6	187	19					1	4 & 7	27	21	12	15
Tripp Slope,			7x11	325	9					6x 9	67	1	6 & 8	27	15	12	15
Tripp Shaft,	10x35	325												30	18	12	15
air-shaft,	10x14	350															
Hampton Shaft,	9x17	156	7x14	810	6	120	19			7x14	256	1	9 & 30	30	18	12	15
air-shaft,	6x10	103															
Bellevue Shaft,	10x18	221	7x14	265	$5\frac{1}{2}$	79	$19\frac{1}{2}$			7x15	600	1	10	30	15	12	15
			7x12	1,000	5												
Bellevue Slope,			7x13	671	11			557	7	7x16	210			30	15	12	18
air-shaft,	9x10	221															
Continental Shaft,	10x21	390				200	9	950	12			1	17	27	18	12	15
air-shaft,	13 cir.	373															
Scranton Slope,			8x12	1,601	4—11	330	12					1	6	27	18	12	15
air-shaft,	12x12	60															
Oxford Shaft,	10x23	381				260	14					1	13	27	18	12	15
air-shaft,	10x24	354															
Taylor Shaft,	10x18	162	6x 8	230	22	140	19	300	10			1	5	30	18	12	15
air-shaft,	12x16	180															
drift,	12x12	70															
Dodge Shaft,	10x21	294				262	22	350	15			1	5	27	18	12	15
air-shaft,	13 cir.	254															

TABLE No. 7—*Continued.*

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY—*Continued.*

NAMES OF COLLIERIES.	Dimensions of shaft in feet.	Depth of shaft in feet.	Dimensions of slope in feet.	Length of slope in feet.	Angle of slope in degrees.	Length of plane outside in feet.	Angle of plane outside in degrees.	Length of plane inside in feet.	Angle of plane inside in degrees.	Dimensions of tunnels in feet.	Length of tunnel to coal in feet.	Number of breakers.	Number of screens and chutes.	What is the average width of chambers?	What is the average width of pillars?	What is the width of heading in feet?	What is the width of air-ways in feet?
Hyde Park Shaft,	10x21	265	7x12	350	6	240	9	265	8	. . . .	.	1	6	30	18	12	15
						160	19	304	6								
								714	6								
air-shaft,	12x12	238															
Central Shaft,	10x34	320	8.6x12	900	2	. . .	. .	280	$4\frac{1}{8}$	. . . .	. . .	1	11	28	17	12	15
air-shaft,	10x21	400															
Archbald Shaft,	10x26	354	7x12	563	17	115	8	350	$4\frac{1}{2}$	. .	. . .	1	. . . .	30	15	12	15
Cayuga Shaft,	10x32	368	. . . .	. . .	. . . .	. . .	. .	300	11	. . . .	. . .	1	8	30	21	12	15
								350									
Sloan Shaft,	10x35	500	7x12	800	22	. . .	. .	. . . .	. .	. . . .	. . .	1	10 & 13	30	15	12	15
Pyne Shaft,	10x34	319	7x14	772	22	.	.	600	4	. . . .	. . .	1	8	30	18	12	15
Brisbin Shaft,	10x37	378	. . . .	. . . .	. . . .	355	$8\frac{1}{8}$	775	4	. . . .	. .	1	10	27	21	12	15
								589	5								
								239	12								
Storrs' Shaft,	10x44	416															
Supply Shaft,	10x18	185	6x16	482	4	. . .	. .	345	4								
Manville Shaft,	10x23	165	6x16	528	4	. . .		330	4	. . . .	. . .	1	8 & 13	27	15	12	15
Total,	30	8,410	15	9,445	. . . .	2,448	12	7,598	17	4	1,133	17	. . .	. .	. .	. .	. .

DELAWARE AND HUDSON CANAL COMPANY.

Racket Brook,	. . . .	. . .	. . .	. . . .	. . . .	200	$14\frac{1}{2}$	. . . .	. . . .	.	. .	1					
Coal Brook,	10x18	40	. . . .	. . . .	. . .	200	$14\frac{1}{2}$	300	$7\frac{1}{6}$	7x10	250	1	. . . .	30	15	10	14
						200	$9\frac{2}{3}$	500	$9\frac{2}{3}$	6x 9	300						
								487	$11\frac{1}{6}$	7x10	800						
								450	$6\frac{1}{4}$								
No. 1 Shaft,	11x11	83	6x 8	300	$8\frac{1}{4}$	600	$9\frac{3}{4}$	250	$8\frac{1}{4}$	7x11	800	. .	1	30	15	8	8
	9x 9	90	. . .	. . . .	. . . .	. . .	. .	400	$4\frac{3}{4}$	. . .	. . .	. .	. . . .	36	15	10	14
								450	$11\frac{1}{6}$								
No. 3 Shaft,	10x12	20	. . . .	. . . .	. . . .	. . .	. .	. . . .	. . .	. . . .	. . .	. .	1	30	15	8	8
	10x27	90															

Powderly,	8x10	80	7x10	700	$7\frac{1}{8}$	500	$9\frac{2}{3}$	....	....	6x 9	300	.	1	36	15	10	14
Jermyn, No. 1,	9x23	90	7x12	1,500	$4\frac{3}{4}$	200	$9\frac{2}{3}$	....	....	....	....	1	....	36	14	12	14
	14x14	60															
Jermyn, No. 2,	.....	....	7x12	200	$11\frac{1}{8}$	200	$11\frac{1}{8}$	450	$4\frac{3}{4}$	....	....	1	....	36	14	12	14
								500	4								
								450	$5\frac{2}{3}$								
White Oak,	7x 7	25	7x10	1,200	4	500	$11\frac{1}{8}$	450	$7\frac{1}{8}$	7x10	150	1	....	36	14	10	14
	9x 9	81	....	....	....	400	$8\frac{1}{4}$	500	$7\frac{1}{8}$								
	12x12	30															
Grassy Island,	7x14	240	7x10	500	$4\frac{1}{8}$	200	$14\frac{1}{8}$	550	$4\frac{1}{8}$	....	....	1	....	30	15	10	14
	10x27	300	....	....	....	....	....	300	$14\frac{1}{8}$								
	11x14	252															
Olyphant, No. 2,	10x30	408	....	....	..	250	$9\frac{2}{3}$	450	$5\frac{3}{8}$	....	....	1	....	30	18	10	14
Eddy Creek,	10x27	386	6x10	600	4	250	$11\frac{1}{2}$	600	$11\frac{1}{8}$	....	....	1	....	30	18	10	14
								700	$5\frac{3}{4}$								
Marvine,	10x42	340	7x12	550	$4\frac{3}{4}$	300	$11\frac{1}{8}$	600	$6\frac{1}{8}$	....	..	1	....	30	18	10	14
Leggett's Creek,	10x30	324	7x10	150	$6\frac{1}{8}$	700	$11\frac{1}{8}$	....	....	7x13	200	1	....	30	18	10	14
	10x13	320															
Von Storch,	10x30	547	7x15	1,000	$9\frac{1}{8}$	280	$14\frac{1}{8}$	600	$8\frac{1}{8}$	7x10	750	1	....	30	18	10	14
	10x14	257	7x10	550	$4\frac{1}{2}$	425	$11\frac{1}{8}$	600	$4\frac{2}{3}$								
								400	$4\frac{2}{3}$								
Total,	21	4,063	11	7,250	....	5,405	16	9,987	21	8	3,550	11	3	..	..	..	..

TABLE No. 7 —*Continued.*

MISCELLANEOUS COAL COMPANIES.

NAMES OF COLLIERIES.	Do you work airways along all gangways and headings?	Length of headings in feet.	Length of airways in feet.	Length of T iron track laid in mines.	Length of strap-iron track laid in mines.	Length of T or S strap iron laid outside.	What is the nature of the roof?	What is the name of the seam of coal worked?	What is the average thickness of the seam worked, in feet?
Everhart Slope Mines,	Yes,	1,300	1,260	3,000	750	2,640 T	Hard rock,	Bottom,	9
Tompkins Shaft Mines,	Yes,	1,110	1,980	3,740	. . . .	2,700 T	Rock,	14-foot and Clark,	9 and 4
Fairmount Shaft Mines,	Yes,	6,500	5,200	7,500	.	1,450	Good hard rock,	Marcy and Red Ash,	5
Beaver Slope Mines,	Yes,		Aban	doned	April	1, 1884.			
Twin Shaft Mines,	Yes,	2,100	2,100	2,400	2,600	300	Solid rock,	Marcy,	4 to 9
Mosier Shaft Mines,	Yes,	1,880	1,880	1,400	200	400 T	Hard rock,	Marcy,	8
Butler Shaft Mines,	Yes,			3,000	150	300	Hard rock,	Marcy and Pittston,	6 & 14
Heidelburg Shaft Mines,	Yes,	3,300	2,500	3,400	.		Good,	Marcy,	9 to 12
	Yes,	1,600	1,600	2,500	600	10,000 T	Slate,	Red Ash,	6
Ontario Slope Mines,	Yes,	.	.	.	. . .		Good,	Marcy,	
Florence Shaft Mines,	Yes,	1,200	1,200	2,000	. .	5,000 T	Fair,	Clark,	10
Phœnix Shaft Mines,	Yes,	2,000	2,000	2,500	3,000	1,500	Rock and fire-clay,	4th and 6th veins,	7
Stetler Shaft Mines,	Yes,	5,300	5,300	13,100	1,500	.	Top vein, black rock,	Ross vein,	$6\frac{1}{2}$
Stetler Shaft Mines, air-shaft,	Yes,	. . .	. . .	. . .	. . .	1,735	Bottom vein, sandstone,	Red Ash,	$6\frac{1}{2}$
Hillside Shaft, now Consolidated Mines,	Yes,	9,500	9,500	1,675	45	.	Slate,	Brown,	10
Hillside Shaft, now Consolidated Mines,	Yes,	7,200	7,360	7,650	400	9,700	Slate,	Brown & Stark,	10 and 6
Spring Brook Tunnel Mines,	Yes,	3,350	3,350	7,350	1,950	3,900	Sandstone,	Stark, or B vein,	7
Glendale Tunnel Mines, air-shaft,	Yes,	2,000	1,850	2,690	1,820	2,100 S R	Slate and rock,	New County,	6 to 9
Dunn Shaft Mines,	Yes,	. . .	.	4,500	. . .	780	Sand rock,	New County,	8
Sibley Shaft Mines,	Yes,	5,500	5,500	1,600	. . .	1,400	Slate,	New County and Clark,	8 and 5
Greenwood Mines,	Yes,	20,500	20,500	20,261	2,962	6,100	Black and sand rock,	Clark vein,	4
Greenwood Mines,	Yes,								
National Mines, shaft and slope,	Yes,	7,250	7,250	5,650	250	1,300 S	Hard sandstone,	No. 5 vein,	5
Meadow Brook Shaft and Tunnel,	Yes,	46,000	41,100	21,090	1,000	12,700 T	Hard sandstone,	No. 5 vein,	5
Amity Shaft Mines,	Yes,	1,170	1,110	2,480	. . . .	1,325 T	Slate and sand rock,	New County and Clark veins,	7 & 10
Bridge Shaft and Slope Mines,	Yes,	4,500	4,200	4,500	.	2,000	Slate,	Rock and G veins,	7 & 14
Mount Pleasant Slope Mine, air-shaft,	Yes,	20,145	19,225	5,500	7,900	8,450 S	Slate,	E and G veins,	7 & 14
Capouse Shaft Mines,	Yes,	29,600	29,600	46,500	. . .	16,000 T S	Rock and bony,	G and Clark veins,	12 & 7
Pine Brook Shaft Mines,	Yes,	2,000	2,000	8,000	. . . .	2,000 T	Hard rock, rock & bony,	No. 4 and Clark veins,	4 & 7
Fair Lawn Slope Mines,	Yes,	3,300	3,300	3,800	.	3,800 T	Rock, bony, & fire-clay,	Clark and No. 4,	7 & 5
Green Ridge Slope Mines, air-shaft,	Yes,	4,500	4,500	5,200	6,700	1,000 T	Rock and bony coal,	Clark and 1st & 2d Dunmore,	7 & 5
Spencer's Shaft Mines,	Yes,	2,800	2,800	7,850	. .	5,775 T	Rock,	Upper Dunmore,	4
Lucas Shaft Mines, air-shaft,	Yes,	1,650	1,650	5,350	200	500 S 849 T	Slate,	G, or 14-foot vein,	10

Pancoast Shaft Mines,	Yes,	4,050	4,150	7,450	1,100	1,300 T	Rock and fire-clay,	Diamond and 14 foot,	5 and 6
Pancoast Shaft Mines, air-shaft,		2,570	2,300	1,600		12,200 T			
Jermyn, No. 4, Throop Shaft, supply-shaft,	Yes,	3,500	3,500	5,400	400	800 T	Slate,	G, or 14-foot vein,	6
Lackawanna Coal Company Shaft Mine,	Yes,	2,800	2,800	3,200	750	400 T	Slate,	Grassey Island vein,	8
Grassey Island Coal Company Shaft Mine,	Yes,	3,850	3,850	8,600	4,200	8,580 T	Slate and rock,	Grassey Island vein,	10½
Filer's Slope Mine, air-shaft,	Yes,	7,200	7,200	3,800	2,600	3,600 T	Rock,	Archbald vein,	9
Pierce Coal Company's Tunnel Mines,	Yes,	6,500	6,500	4,200	5,300	1,800 S 15,840 T	Sandstone,	Archbald vein,	10
Eaton Shaft, Slope, and Tunnel Mines,	Yes,	14,960	14,760	3,600	10,560	16,350 T	Sandstone,	Archbald vein,	7
Edgerton Tunnel Mines,	Yes,	3,200	2,000		3,400		Good,	Not known,	1½
Erie Shaft Mines,	Yes,	23,820	21,820	18,348	11,880	1,200 T	Hard sandstone,	Carbondale vein,	7½
Keystone Tunnel Mines, air-shaft,	Yes,	5,533	4,401	7,850	4,046	4,750 T	Bone and slate,	Carbondale vein,	7½
Forest City Shaft Mines, air-shaft,	Yes,	6,158	4,671	8,976	1,814	2,641 T	Slate,	Forest City vein,	5
Belmont Tunnel Mines,	Yes,	5,080	4,900	7,500		1,800 T	Slate,	Nos. 2 and 3, Carbondale,	6 and 5½
Brennan's Tunnel Mines,	Yes,							Carbondale,	½
Totals,				290,510	78,077	176,965			

PENNSYLVANIA COAL COMPANY.

No. 8 Breaker, Shaft No. 1,	Yes,	4,500	4,500	6,000	1,000	1,000	Sandstone,	Marcy vein,	9
No. 8 Breaker, Shaft No. 8,	Yes,	22,600	22,600	17,600	2,500	2,300	Sandstone,	Marcy vein,	9
Shaft No. 4, 14-foot vein,	Yes,	1,000	800	9,685	6,450	1,530 T	Slate,	Pittston 14-foot vein,	13
Shaft No. 4, Marcy vein,	Yes,	12,000	12,000	6,050	14,860	650 S	Slate,	Marcy vein,	5
No. 6 Breaker, Shaft No. 5,	Yes,	16,200	16,700	15,000	800	3,400	Rider coal and rock,	Pittston 14-foot vein,	10
No. 6 Breaker, Shaft No. 6,	Yes,	16,175	15,175	10,800	6,100	5,420	Rider coal and rock,	Pittston 14-foot vein,	10
No. 6 Breaker, Shaft No. 11,	Yes,	16,600	16,600	12,000	3,300	1,925	Slate and rock,	14-foot and Marcy veins,	10 and 3
Shaft No. 7,	Yes,	28,175	27,025	16,425	6,350	843	Rider coal and slate,	Pittston 14-foot vein,	11½
No. 10 Breaker, Shaft No. 9,	Yes,	8,250	9,690	8,680	3,200	2,000	Rider coal and slate,	Pittston 14-foot vein,	8
No. 10 Breaker, Shaft No. 10, 7-foot vein,	Yes,	2,100	1,900	2,200	600	2,100	Rider coal and slate,	Pittston 14-foot vein,	6
No. 10 Breaker, Shaft No. 10, 14-foot vein,	Yes,	9,180	8,900	3,142	4,038	2,100	Rider coal and slate,	Pittston 7-foot vein,	8
No. 10 Breaker, Shaft No. 10, Marcy vein,	Yes,	15,641	27,370	13,111	5,400	2,351	Sandstone,	Marcy vein,	8
Central Breaker, Shaft No. 12,	Yes,	3,000	3,000	2,600	900	1,938	Rock and slate,	Powder-mill vein,	10
Central Breaker, Shaft No. 13,	Yes,	10,700	8,300	9,700	800	5,220	Rock, slate, and coal,	Powder-mill vein,	10
Central Breaker, Law Shaft,	Yes,	13,000	13,000	11,450	3,500	5,100	Slate and rock,	Powder-mill vein,	10
Slope No. 2,	Yes,	18,700	17,800	10,700	300	200	Slate,	Pittston 14-foot vein,	10
Slope No. 4,	Yes,	20,600	20,200	12,400	7,373	8,520	Slate,	Pittston 14-foot vein,	11
Tunnel No. 1,	Yes,	10,205	10,205	10,863	8,700	990	Rock,	Marcy vein,	5
Barnum Breaker, No. 1, 7-foot vein,	Yes,	8,600	11,320	5,700	300	400	Slate,	Pittston 7-foot vein,	7
Barnum Breaker, No. 1, Marcy vein,	Yes,	1,000	1,000	500		2,700	Rock,	Marcy vein,	8
Barnum Breaker, No. 1, 14-foot vein,	Yes,	7,950	9,400	6,600	300	400	Rider and black rock,	Pittston 14-foot vein,	9
Barnum Breaker, No. 2, 7-foot vein,	Yes,	6,500	10,400	5,500		2,700	Slate,	Pittston 7-foot vein,	7
Barnum Breaker, No. 2, 14-foot vein,	Yes,	7,600	12,800	5,800			Rider and black rock,	Pittston 14-foot vein,	9
Old Forge Shaft and Breaker,	Yes,	4,800	4,800	5,275		8,704	Rock,	Powder-mill vein,	5 and 9

DUNMORE DIVISION.

Shaft No. 2, top vein,	Yes,	1,900		3,000	3,000	2,000	Slate and bone,	Dunmore top vein,	4½
Shaft No. 2, bottom vein,	Yes,	1,400		200	1,400		Slate and bone,	Dunmore bottom vein,	3½
Shaft No. 3, top vein,	Yes,			5,200		500	Sandstone,	Dunmore top vein,	4½

TABLE No. 7 *Continued.*

DUNMORE DIVISION—*Continued.*

NAMES OF COLLIERIES.	Do you work airways along all gangways and headings?	Length of headings in feet.	Length of airways in feet.	Length of T iron track laid in mines.	Length of strap-iron track laid in mines.	Length of T or S' strap iron laid outside.	What is the nature of the roof?	What is the name of the seam of coal worked?	What is the average thickness of the seam worked, in feet?
Shaft No. 3, middle vein,	Yes,			2,200	800		Slate,	Dunmore middle vein,	4½
Shaft No. 3, bottom vein,	Yes,			2,300	500		Slate,	Dunmore bottom vein,	4½
Shaft No. 4, top vein,	Yes,						Slate,	Dunmore middle vein,	4½
Shaft No. 4, bottom vein,	Yes,			5,050			Slate,	Dunmore bottom vein,	4½
Shaft No. 5, top or Clark vein,	Yes,			7,338			Slate,	Clark vein,	4½
Shaft No. 5, 1st Dunmore vein,	Yes,			4,399			Slate,	Dunmore top vein,	4½
Shaft No. 5, 2d Dunmore vein,	Yes,			500			Slate,	Dunmore middle vein,	4½
Shaft No. 5, 3d Dunmore vein,	Yes,			60			Slate and bony coal,	Dunmore bottom vein,	4
Total Pennsylvania Coal Company,				225,186	77,633	58,253			

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY.

Diamond, No. 2, Shaft,	Yes,			20,854	532	3,940	Slate,	G, or Big vein,	12
Tripp Slope,	Yes,			14,412		1,500	Slate,	Diamond vein,	7½
Tripp Shaft,	Yes,			1,000		800	Slate,	Clark vein,	8
Hampton Shaft,	Yes,			60,000	460	2,745	Slate,	Diamond and rock,	5½ & 7
Bellevue Shaft,	Yes,			22,041	850	7,000	Bone and slate,	Clark and G veins,	6½ & 11
Bellevue Slope,	Yes,			13,451	295	200	Slate,	Rock,	8½
Continental Shaft,	Yes,			21,381	7,000	6,300	Bony,	Clark,	7½
Scranton Slope,	Yes,			14,000	1,943	650	Rock,	Clark,	6½
Oxford Shaft,	Yes,			11,550		3,300	Bony,	Clark and G,	6 & 8
Taylor Shaft,	Yes,			40,050	5,100	4,665	Slate,	New County and rock,	7 & 5
Dodge Shaft,	Yes,			31,908	2,400	7,575	Slate,	G and T veins,	12 & 7
Hyde Park Shaft,	Yes,			25,860	909	3,231	Slate,	G and T veins,	13 & 7
Central Shaft,	Yes,			44,562	3,000	4,650	Slate,	G and T veins,	14 & 7.10
Archbald Shaft,	Yes,			19,980		4,636	Slate,	New County and rock,	7 & 7
Cayuga Shaft,	Yes,			22,020		4,690	Slate,	G and E veins,	9 & 7
Sloan Shaft,	Yes,			22,035		2,800	Slate,	G and Clark veins,	10 & 9
Pyne Shaft,	Yes,			49,266		3,500	Bone,	Clark and New County veins,	12 & 8
Brisbin Shaft,	Yes,			29,279	2,360	6,750	Slate,	G vein,	9½
Manville Shaft,	Yes,			27,550	450	3,232	Bony and slate,	Clark,	6½
Total,				490,199	26,990	72,104			

TABLE No. 7—*Continued.*

DELAWARE AND HUDSON CANAL COMPANY.

Coal Brook,	Yes,						Rock,		5 to 8
No. 1 Shaft,	No,						Rock,	Top,	7
	Yes,						Slate,	Bottom,	6
No. 3 Shaft,	No,						Slate,	Bottom,	6
Powderly,	No,						Rock,	Top,	5
							Rock and slate,	Bottom,	8
Jermyn, No. 1,	Yes,						Rock,	Archbald,	10
Jermyn, No. 2,	Yes,						Rock,	Archbald,	10
White Oak,	Yes,						Rock,	Archbald,	10
Grassy Island,	Yes,						Rock,	Grassy vein,	6 to 11
Olyphant, No. 2,	Yes,						Rock,	Grassy vein,	6 to 9
Eddy Creek,	Yes,						Rock,	Grassy vein,	5
Marvine,	Yes,						Fire-clay,	Diamond,	7
							Rock,	14-foot,	9 to 16
Leggett's Creek,	Yes,						Rock,	14-foot,	7
							Rock,	14-foot,	9 to 16
Von Storch,	Yes,						Fire-clay,	Diamond,	7
							Rock,	14-foot,	8 to 14
							Rock,	Clark,	8
Total,		Estim	ated,	275,000	120,000	50,000			

TABLE No. 7.—*Continued.*

RECAPITULATION.

NAMES OF COLLIERIES.	Number of shafts.	Depth of shaft in feet.	Number of slopes.	Length of slope in feet.	Length of planes outside in feet.	Number of planes outside.	Length of plane inside in feet.	Number of planes inside.	Number of tunnels.	Length of tunnels to coal in feet.	Number of breakers.	Number of screens and chutes.	Length of T iron track laid in mines.	Length of strap-iron track laid in mines.	Length of T or S^{t}=strap iron laid outside.
Miscellaneous coal companies, ...	54	10,922	31	18,526	8,495	23	12,510	20	19	2,906	42	1	290,510	78,077	176,965
Pennsylvania Coal Company, ...	24	5,080	15	11,372	2,916	7	10,159	31	1	92	13	7	225,186	77,633	58,253
Delaware, Lackawanna and Western Railroad Company, ...	30	8,410	15	9,445	2,448	12	7,598	17	4	1,133	17	. .	490,199	26,990	72,104
Delaware and Hudson Canal Company, ...	21	4,063	11	7,250	5,405	16	9,987	21	8	3,550	11	3	275,000	120,000	50,000
Totals, ...	129	28,475	72	46,593	19,264	58	40,254	89	32	7,675	83	11	1,280,895	302,700	357,322

There are 129 shafts, with a total depth of 28,475 feet.
There are 72 slopes, with a total length of 46,593 feet.
There are 58 outside planes, with a total length of 19,264 feet.
There are 89 inside planes, with a total length of 40,254 feet.
There are 32 tunnels, with a total length of 7,675 feet.
There are 83 breakers for preparing coal for market.
There are 11 buildings with chutes for the purpose of loading coal.
There are 7 small breakers connected with local coal sale mines.
There are 2 new breakers which have not shipped coal yet.
There are 212.4 miles of T iron track laid inside in mines.
There are 57.33 miles of strap-iron track laid inside in mines.
There are 67.7 miles of track laid outside in connection with mines.

TABLE No. 7.—*Continued.*

MISCELLANEOUS COMPANIES.

NAMES OF COLLIERIES.	Have you not an ambulance and stretchers at your mines?	Is the breaker machinery fenced and boxed off?	Are the shaft landings protected by safety-gates?	Is there a metal speaking-tube in the shaft or slope?	Is there a safety-cartridge or cage with all modern improvements?	Is there a safety-cartridge or cage furnished whenever men are waiting to come out of the mines?	Are persons allowed to ride on loaded cars in shafts or slopes or planes?	Are there more than ten persons allowed to ride on safety-cartridge or cage at one time?	Are the engineers experienced, competent, and sober men?	Have they reported the condition of boilers according to law? Are they in a safe condition?	Have they furnished a map or plan of mine workings?
Everhart Slope Mines,	Yes,	Yes,	Yes,	No,	No,	No,	No,	No,	Yes,	Yes,	Yes,
Tompkins Shaft Mines,	"	"	"	Yes,	Yes,	Yes,	"	"	"	"	"
Fairmount Shaft Mines,	Stretcher,	"	"	"	"	"	"	"	"	"	"
Beaver Slope Mines, (abandoned April 1, 1884.)	"	"	"	"	"	"	"	"	"	"	"
Twin Shaft Mines,	Ambulance,	"	"	"	"	"	"	"	"	"	"
Mosier Shaft Mines,	Stretchers,	"	"	"	"	"	"	"	"	"	"
Butler Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Heidelberg Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Ontario Slope Mines,	"	"	"	"	"	"	"	"	"	"	"
Florence Shaft Mines. (Not working at present.)	"	"	"	"	"	"	"	"	"	"	"
Phœnix Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Steller Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Hillside Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Spring Brook Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"
Glendale Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"
Dunn Shaft Mines,	Yes,	"	"	"	No,	"	"	"	"	"	"
Sibley Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Greenwood Slope, Shaft, and Tunnel,	"	"	"	"	"	Yes,	"	"	"	"	"
National Shaft and Slope Mines,	"	"	"	"	"	We have	a travel	ling way.	"	"	"
Meadow Brook Shaft and Tunnel,	"	"	"	"	We	have a	travelling	way.	"	"	"
Amity Shaft Mines,	"	"	"	"	Yes,	Yes,	No,	No,	"	"	"
Bridge Shaft and Slope Mines,	"	"	"	"	"	"	"	"	"	"	"
Mount Pleasant Slope Mines,	"	"	"	No,	"	"	"	"	"	"	"
Capouse Shaft Mines,	"	"	"	Yes,	"	"	"	"	"	"	"
Pine Brook Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Fair Lawn Slope Mines,	"	"	"	"	"	"	"	"	"	"	"
Green Ridge Slope Mines,	"	"	"	"	"	"	"	"	"	"	"
Spencer Shaft Mines,	"	"	"	No,	"	"	"	"	"	"	"
Lucas Shaft Mines,	Stretchers,	"	"	Yes,	"	"	"	"	"	"	"

TABLE No. 7—*Continued.*

MISCELLANEOUS COMPANIES—*Continued.*

Names of Collieries.	Have you got an ambulance and stretchers at your mines?	Is the breaker machinery fenced and boxed off?	Are the shaft landings protected by safety-gates?	Is there a metal speaking-tube in the shaft or slope?	Is there a safety-carriage or cage with all modern improvements?	Is there a safety-carriage or cage furnished whenever ten men are waiting to come out of the mines?	Are persons allowed to ride on loaded cars in shafts or slopes or planes?	Are there more than ten persons allowed to ride on safety-carriage or cage at one time?	Are the engineers experienced, competent, and sober men?	Have they reported the condition of boilers according to law? Are they in a safe condition?	Have they furnished a map or plan of mine workings?
Richmond Shaft and Slope Mines. (No report made.)											
Pancoast Shaft Mines,	Ambulance,	Yes,	Yes,	Yes,	Yes,	Yes,	No,	No,	Yes,	Yes,	Yes,
Jermyn, No. 4, Throop Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Lackawanna Coal Company Shaft Mines,	Stretchers,	"	"	"	"	"	"	"	"	"	"
Grassey Island Shaft Mines,	Ambulance,	"	"	"	"	"	"	"	"	"	"
Filer's Slope Mines,	"	"	"								
Dolph Tunnel Mines. (No report.)											
Pierce Coal Company Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"
Eaton Shaft, Slope, and Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"
Edgerton Tunnel Mines,	Stretchers,	"	"	"	"	"	"	"	"	"	"
Erie Shaft Mines,	Ambulance,	"	"	"	"	"	"	"	"	"	"
Keystone Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"
Forest City Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"
Belmont Tunnel Mines,	"	"									
Brennan's Tunnel Mines. (No report made.)											

PENNSYLVANIA COAL COMPANY.

No. 8 Breaker, Shaft No. 1,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	No,	No,	Yes,	Yes,	Yes,
No. 8 Breaker, Shaft No. 8,	"	"	"	"	"	"	"	"	"	"	"
No. 8 Breaker, Slope No. 6. (Abandoned April 1, 1884.)											
Shaft No. 4,	"	None,	"	"	"	"	"	"	"	"	"
No. 6 Breaker, Shaft No. 5,	"	Yes,	"	"	"	"	"	"	"	"	"
No. 6 Breaker, Shaft No. 6,	"	"	"	"	"	"	"	"	"	"	"
No. 6 Breaker, Shaft No. 11,	"	"	"	"	"	"	"	"	"	"	"
Shaft No. 7,	"	"	"	"	"	"	"	"	"	"	"

No. 10 Breaker, Shaft No. 9,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	No,	No,	Yes,	Yes,	Yes.
No. 10 Breaker, Shaft No. 10, 7-foot vein,	"	"	"	"	"	"	"	"	"	"	"
No. 10 Breaker, Shaft No. 10, 14-foot vein,	"	"	"	"	"	"	"	"	"	"	"
No. 10 Breaker, Shaft No. 10, Marcy vein,	"	"	"	"	"	"	"	"	"	"	"
Central Breaker, Shaft No. 12,	"	"	"	"	"	"	"	"	"	"	"
Central Breaker, Shaft No. 13,	"	"	"	"	"	"	"	"	"	"	"
Central Breaker, Law Shaft.	"	"	"	"	"	"	"	"	"	"	"
Slope No. 2,	"			No,			"	"	"	"	"
Slope No. 4,	"			"			"	"	"	"	"
Tunnel No. 1,	"			"			"	"	"	"	"
Stark Shaft and Breaker. (Abandoned Nov. 1, 1884.)											
Barnum Breaker, No. 1, 7-foot vein,	"	"	"	Yes,	"	"	"	"	"	"	"
Barnum Breaker, No. 1, Marcy vein,	"	"	"	"	"	"	"	"	"	"	"
Barnum Breaker, No. 1, 14-foot vein,	"	"	"	"	"	"	"	"	"	"	"
Barnum Breaker, No. 2, 7-foot vein,	"	"	"	"	"	"	"	"	"	"	"
Barnum Breaker, No. 2, 14-foot vein,	"	"	"	"	"	"	"	"	"	"	"
Old Forge Shaft and Breaker,	"	"	"	"	"	"	"	"	"	"	"
Eagle Shaft. (Temporarily abandoned Oct. 11, 1884.)											
Carbon Hill. (Temporarily abandoned June, 1884.)											
Shaft No. 14, (now sinking; depth Jan. 1, 1885, 385 feet,)	"								Yes.		
No. 2 Breaker, (this breaker is situated at the head of No. 2 Plane, and prepares coal from collieries having no breakers,)	"	"									

DUNMORE DIVISION.

Shaft No. 2, Dunmore vein,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	No,	No,	Yes,	Yes,	Yes.
Shaft No. 3, Dunmore vein,	"	"	"	"	"	"	"	"	"	"	"
Shaft No. 4, Dunmore vein,	"	"	"	"	"	"	"	"	"	"	"
Shaft No. 5, Dunmore vein,	"	"	"	"	"	"	"	"	"	"	"

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY.

Diamond, No. 2, Shaft,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	No,	No,	Yes,	Yes,	Yes.
Tripp Slope,	"	"	. . .	"	. . .	. . .	"	. . .	"	"	"
Tripp Shaft,	"	"	"	"	"	"	"	"	"	"	"
Hampton Shaft,	"	"	"	"	"	"	"	"	"	"	No.
Bellevue Shaft,	"	"	"	"	"	"	"	"	"	"	Yes.
Bellevue Slope,	"	"	"	"	"	"	"	"	"	"	"
Continental Shaft,	"	"	"	"	"	"	"	"	"	"	"
Scranton Slope,	"	"	. . .	"	. . .	. . .	"	. . .	"	"	"
Oxford Shaft,	"	"	"	"	"	"	"	"	"	"	"
Taylor Shaft,	"	"	"	"	"	"	"	"	"	"	"
Dodge Shaft,	"	"	"	"	"	"	"	"	"	"	"
Hyde Park Shaft,	"	"	"	"	"	"	"	"	"	"	"

TABLE No. 7—*Continued.*

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY—*Continued.*

NAMES OF COLLIERIES.	Have you got an ambulance and stretchers at your mines?	Is the breaker machinery fenced and boxed off?	Are the shaft landings protected by safety-gates?	Is there a metal speaking-tube in the shaft or slope?	Is there a safety-carriage or cage with all modern improvements?	Is there a safety-carriage or cage furnished whenever ten men are waiting to come out of the mines?	Are persons allowed to ride on loaded cars in shafts or slopes or planes?	Are there more than ten persons allowed to ride on safety-carriage or cage at one time?	Are the engineers experienced, competent, and sober men?	Have they reported the condition of boilers according to law? Are they in a safe condition?	Have they furnished a map or plan of mine workings?
Central Shaft,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	No,	No,	Yes,	Yes,	Yes.
Archbald Shaft,	"	"	"	"	"	"	"	"	"	"	"
Cayuga Shaft,	"	"	"	"	"	"	"	"	"	"	"
Sloan Shaft,	"	"	"	"	"	"	"	"	"	"	"
Pyne Shaft,	"	"	"	"	"	"	"	"	"	"	"
Brisbin Shaft,	"	"	"	"	"	"	"	"	"	"	"
Manville Shaft,	"	"	"	"	"	"	"	"	"	"	"
Storrs Shaft,	"	"	"	"	"	"	"	"	"	"	"
DELAWARE AND HUDSON CANAL COMPANY.											
Racket Brook,							No,		Yes,	Yes,	Yes.
Coal Brook,	Yes,	Yes,					"		"	"	"
No. 1 Shaft,	"	"		No,			"		"	"	"
No. 3 Shaft,	"		Yes,	"	Yes,	Yes,	"	No,	"	"	"
Powderly,	"		"	Yes,	"	"	No,	"	"	"	"
Jermyn, No. 1,	"	"	"	"	No,	No,	"	"	"	"	"
Jermyn, No. 2,	"	"	"	No,	"	"	"	"	"	"	"
White Oak,	"	"	"	"	Yes,	Yes,	"	"	"	"	"
Grassey Island,	"	"	"	Yes,	"	"	"	"	"	"	"
Olyphant, No. 2,	"	"	"	"	"	"	"	"	"	"	"
Eddy Creek,	"	"	"	"	"	"	"	"	"	"	"
Marvine,	"	"	"	"	"	"	"	"	"	"	"
Leggitt's Creek,	"	"	"	"	"	"	"	"	"	"	"
Von Storch,	"	"	"	"	"	"	"	"	"	"	"

TABLE No. 7—*Continued.*

MISCELLANEOUS COAL COMPANIES—*Continued.*

Names of Collieries.	Do the parties having charge know their duties in case of death or serious accidents?	Is the mining boss a competent and practical man?	Has the mining boss an assistant or fire boss?	Is the mine examined every morning before persons are allowed to enter to work?	Is the mine examined every evening to see that the main doors are all closed?	Are there attendants at all main doors?	Are the doors hung on main roads so as to close of their own accord?	Are there double doors on main traveled roads?	Is there an extra door in case of an accident to any of the other doors?	Is there any noxious or inflammable gas evolved in the mines?	Are you working towards where there is any standing water or gas?	Are you familiar with the mine law of 1870, and its supplements?	Have you established a code of mine laws for the better protection of life and property?	Have you got a second opening yet?
Everhart Slope Mines,	Yes,	Yes,	No,	Yes,	Yes,	Yes,	Yes,	No,	No,	No,	No,	Yes,	Yes,	Yes.
Tompkins Shaft Mines,	"	"	Yes,	"	"	"	"	Yes,	Yes,	Yes,	Yes,	"	"	"
Fairmount Shaft Mines,	"	"	No,	"	"	"	"	No,	"	"	No,	"	"	"
Twin Shaft Mines,	"	"	Yes,	"	"	"	"	Yes,	"	"	"	"	"	"
Mosier Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Butler Shaft Mines,	"	"	No,	"	No,	"	"	No,	No,	No,	"	"	"	"
Beddeberg Shaft Mines,	"	"	Yes,	"	Yes,	"	"	Yes,	"	"	"	"	"	"
Ontario Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Phœnix Shaft Mines,	"	"	"	"	"	"	"	"	Yes,	Yes,	"	"	"	"
Stetler Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Hillside Shaft Mines,	"	"	No,	No,	"	"	"	No,	No,	No,	"	"	"	"
Spring Brook Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Glendale Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Dunn Shaft Mines,	"	"	"	Yes,	Yes,	"	"	Yes,	"	"	Yes,	"	"	"
Sibley Shaft Mines,	"	"	"	No,	No,	"	"	"	"	"	No,	"	"	"
Greenwood Shaft and Tunnel,	"	"	"	Yes,	Yes,	"	"	"	"	"	Yes,	"	"	"
National Shaft and Slope Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Meadow Brook Shaft and Tunnel,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Auffy Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Bridge Shaft and Slope Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Mount Pleasant Slope Mines,	"	"	No,	"	"	"	"	"	"	"	"	"	"	"
Capouse Shaft Mines,	"	"	Yes,	"	"	"	"	"	"	"	"	"	"	"
Pine Brook Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Fair Lawn Slope Mines,	"	"	"	"	"	"	"	"	"	"	Yes,	"	"	"
Green Ridge Slope Mines,	"	"	No,	"	No,	"	"	"	"	"	No,	"	"	"
Spencer Shaft Mines,	"	"	"	No,	"	"	"	No,	No,	"	"	"	"	"
Lucas Shaft Mines,	"	"	Yes,	Yes,	Yes,	"	"	Yes,	Yes,	No,	Yes,	"	"	"
Pancoast Shaft Mines,	"	"	"	"	"	"	"	"	"	Yes,	"	"	"	"

TABLE No. 7—*Continued.*

MISCELLANEOUS COMPANIES.—Continued.

NAMES OF COLLIERIES.	Do the parties having charge know their duties in case of death or serious accident?	Is the mining boss a competent and practical man?	Has the mining boss an assistant or fire boss?	Is the mine examined every morning before persons are allowed to enter it to work?	Is the mine examined every evening to see that the main doors are all closed?	Are there attendants at all main doors	Are the doors hung on main roads so as to close of their own accord?	Are there double doors on main traveled roads?	Is there an extra door in case of an accident to any of the other doors?	Is there any noxious or inflammable gas evolved in the mines?	Are you working towards where there is any standing water or gas?	Are you familiar with the mine law of 1870, and its supplements?	Have you established a code of mine rules for the better protection of life and property?	Have you got a second opening yet?
Jermyn, No. 4, Throop Shaft Mines,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	No,	No,	No,	Yes,	Yes,	Yes.
Lackawanna Coal Company Shaft Mines,	"	"	No,	"	No,	"	"	"	"	Yes,	"	"	"	"
Grassey Island Shaft Mines,	"	"	"	"	Yes,	"	"	"	Yes,	No,	"	"	"	"
Filer's Slope Mines,	"	"	"	No,	No,	"	"	No,	No,	"	"	"	"	"
Pierce Coal Company Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Eaton Shaft, Slope, and Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Edgerton Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Erie Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Keystone Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Forest City Shaft Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Belmont Tunnel Mines,	"	"	"	"	"	"	"	"	"	"	"	"	"	"

PENNSYLVANIA COAL COMPANY.

No. 8 Breaker,	Shaft No. 1,	Yes,	Yes,	No,						No,	No,	Yes,	Yes,	Yes.
	Shaft No. 8,	"	"	"			Yes,	Yes,						
Shaft No. 4,		"	"	Yes,	Yes,	Yes,	"	"		Yes,	"	"	"	"
No. 6 Breaker,	Shaft No. 5,	"	"	"	"	"	"	"						
	Shaft No. 6,	"	"	"	"	"	"	"						
	Shaft No. 11,	"	"	"	"	"	"	"						
Shaft No. 7,		"	"	"	"	"	"	"						
No. 10 Breaker,	Shaft No. 9,	"	"	"	"	"	"	"						
	Shaft No. 10, 7-foot vein,	"	"	No,	No,	No,	"	"		No,	"	"	"	"
	Shaft No. 10, 14-foot vein,	"	"	"	"	"	"	"						
	Shaft No. 10, Marcy vein,	"	"	Yes,	Yes,	Yes,	"	"		Yes,	"	"	"	"

Central Breaker, Shaft No. 12	Yes,	Yes,	No,	No,	No,	Yes,	Yes,	. . .	. . .	No,	No,	Yes,	Yes,	Yes,
Central Breaker, Shaft No. 13	"	"	Yes,	Yes,	Yes,	"	"	. . .	. . .	Yes,	"	"	"	"
Central Breaker, Law Shaft	"	"	"	"	"	"	"	. . .	. . .	"	"	"	"	"
Slope No. 2	"	"	"	"	"	"	"	. . .	. . .	"	"	"	"	"
Slope No. 4	"	"	No,	No,	No,	"	"	. . .	. . .	No,	"	"	"	"
Tunnel No. 1	"	"	"	"	"	"	"	. . .	. . .	"	"	"	"	"
Barnum Breaker, No. 1, 7-foot vein	"	"	Yes,	Yes,	Yes,	"	"	. . .	. . .	Yes,	"	"	"	"
Barnum Breaker, No. 1, Marcy vein	"	"	"	"	"	"	"	. . .	. . .	"	"	"	"	"
Barnum Breaker, No. 1, 14-foot vein	"	"	"	"	"	"	"	. . .	. . .	"	"	"	"	"
Barnum Breaker, No. 2, 7-foot vein	"	"	"	"	"	"	"	. . .	. . .	"	"	"	"	"
Barnum Breaker, No. 2, 14-foot vein	"	"	"	"	"	"	"	. . .	. . .	"	"	"	"	"
Old Forge Shaft and Breaker	"	"	"	"	"	"	"	. . .	. . .	"	Yes,	"	"	"
Shaft No. 14	"	"												

DUNMORE DIVISION.

Shaft No. 2, Dunmore vein	Yes,	Yes,	No,	No,	No,	Yes,	Yes,	No,	Yes,	Yes,	No,	Yes,	Yes,	Yes,
Shaft No. 3, Dunmore vein	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Shaft No. 4, Dunmore vein	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Shaft No. 5, Dunmore vein	"	"	"	"	"	"	"	"	"	"	"	"	"	"

LACKAWANNA AND WESTERN RAILROAD COMPANY.

Diamond, No. 2, Shaft	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	Yes,	No,	Yes,	No,	Yes,	Yes,	Yes,
Tripp Slope	"	"	No,	No,	No,	"	"	No,	No,	No,	"	"	"	"
Tripp Shaft	"	"	Yes,	Yes,	Yes,	"	"	. . .	. . .	Yes,	"	"	"	"
Hampton Shaft	"	"	No,	No,	No,	"	"	. . .	. . .	V. lit.	"	"	"	"
Bellevue Shaft	"	"	Yes,	Yes,	Yes,	"	"	"	"	Yes,	"	"	"	"
Bellevue Slope	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Continental Shaft	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Scranton Slope	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Oxford Shaft	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Taylor Shaft	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Dodge Shaft	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Hyde Park Shaft	"	"	"	"	"	"	"	"	"	V. lit.	"	"	"	"
Central Shaft	"	"	"	"	"	"	"	"	"	Yes,	"	"	"	"
Archbald Shaft	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Cayuga Shaft	"	"	No,	No,	No,	"	"	"	"	V. lit.	"	"	"	"
Sloan Shaft	"	"	Yes,	Yes,	Yes,	"	"	Yes,	Yes,	Yes,	"	"	"	"
Pyne Shaft	"	"	No,	No,	No,	"	"	"	No,	No,	"	"	"	"
Brisbin Shaft	"	"	Yes,	Yes,	Yes,	"	"	"	Yes,	Yes,	"	"	"	"
Manville Shaft	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Storrs Shaft	"	"	No,	No,	No,	"	"	"	. . .	. . .	"	"	"	"

TABLE No. 7—*Continued.*

DELAWARE AND HUDSON CANAL COMPANY.

NAMES OF COLLIERIES.	Do the parties having charge know their duties in case of death or serious accidents?	Is the mining boss a competent and practical man?	Has the mining boss an assistant or fire boss?	Is the mine examined every morning before persons are allowed to enter it to work?	Is the mine examined every evening to see that the main doors are all closed?	Are there attendants at all main doors?	Are the doors hung on main roads so as to close of their own accord?	Are there double doors on main traveled roads?	Is there an extra door in case of an accident to any of the other doors?	Is there any noxious or inflammable gas evolved in the mines?	Are you working towards where there is any standing water or gas?	Are you familiar with the mine laws of 1870 and its settlements?	Have you established a code of mine rules for the better protection of life and property?	Have you got a second opening yet?
Racket Brook,	Yes,	Yes,	No,	No,	No,	Yes,	Yes,	Yes,	No,	No,	No,	Yes,	Yes.	Yes,
Coal Brook,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
No. 1 Shaft,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
No. 3 Shaft,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Powderly,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Jermyn, No. 1,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Jermyn, No. 2,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
White Oak,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Grassey Island,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Olyphant, No. 2,	"	"	"	Yes,	Yes,	"	"	"	"	Yes,	"	"	"	"
Eddy Creek,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Marvine,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Leggitt's Creek,	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Von Storch,	"	"	"	"	"	"	"	"	"	"	"	"	"	"

TABLE No. 8. - *Machinery and steam-power used at each colliery in the Eastern District of Luzerne and Carbon counties, now including all of Lackawanna and a portion of Wayne and Susquehanna counties, Pennsylvania, for year ending 31st day of December, A. D. 1884.*

MISCELLANEOUS COAL COMPANIES.

NAME OF COLLIERIES.	Number of boilers.	DIMENSIONS. Length in feet.	DIMENSIONS. Diameter in inches.	Pressure per square inch.	Steam-gauge or safety-valve.	Date of last examination.	Condition when last examined.	Number of main rolls.	Number of pony rolls.	Number of main screens.	Number of pony screens.
*Everhart,	5	30	34	70	Both,	New boilers.					
*Tompkins,	6	30	30	60	"						
Fairmount,	6	32	34	70	"	September 1, 1884,	Good,	1	2	1	2
Beaver,	2	34	30	40	"	Abandoned April 1, 1884.					
Twin,	10	30	30	60	"	December 26, 1884,	"	1		1	1
Butler,	3	39	30	60	"	January 1, 1885,	"	1	2	2	2
	4	29	30								
Mosier,	6	34	30	75	"	November 1 1884,	"	1	1	1	1
Heidelberg,	9	30	36	60	"	December, 1884,	"				
Ontario Breaker,	8	30	30	60	"	December, 1884,	"	4	2	2	2
†Florence.											
Hillside, now Consolidated,	6	30	30	75	"	New December, 1884,	"				
Hillside, now Consolidated, Breaker,	3	36	34	70	"	New December, 1884,	"	1	1	4	1
Phœnix,	7	36	34	60	"	January 1, 1885,	"	1	1	1	1
Stetler,	15	40	34	80	"	December 30, 1884,	"	2	2	2	2
Spring Brook,	6	30	30	60	"	August, 1884,	"	2	2	3	1
Glendale,	3	30	34	60	"	December, 1884,	"	1	1	3	2
Dunn,	6	36	36	60	"	January, 1885,	"	1	1	4	
Sibley,	12	30	30	50	"	January, 1885,	"	2	2	6	3
Greenwood Shaft,	6	36	34	70	"	January, 1885,	"				
Greenwood Slope,	6	30	30	70	"	January, 1885,	"				
Phinney Breaker,	4	30	30	65	"	January, 1885,	"	1	1	4	2
National,	8	32	32	70	"	July, 1884,	"	2	2	4	2
Meadow Brook,	8	32	32	65	"	July, 1884,	"				
Meadow Brook Breaker,	6	36	30	60	"	July, 1884,	"	2	2	4	2
Amity,	12	30	34	80	"	December 20, 1884,	"	2	2	4	2

*Idle last four months of year 1884. †Breaker burned down.

TABLE No. 8—*Continued.*

MISCELLANEOUS COAL COMPANIES—*Continued.*

Name of Collieries.	Dimensions. Number of boilers.	Dimensions. Length in feet.	Dimensions. Diameter in inches.	Pressure per square inch.	Steam-gauge or safety-valve.	Date of last examination.	Condition when last examined.	Number of main rolls.	Number of pony rolls.	Number of main screens.	Number of pony screens.
Bridge,	5	30	30	75	Both,	September 3 and 5, 1884,	Good,	1	1	4	2
	12	32	34		"						
	1	20	49		"						
	3	30	34		"						
Mount Pleasant,	8	36	30	80	"	April 30, 1884,	"	2	2	6	2
	2	30	30		"	Examined since, but not reported,	"				
	2	15	43		"						
Capouse,	15	30	36	70	"	October 1, 1884,	"	2	2	2	2
Pine Brook,	6	36	36	70	"	October 1, 1884,	"			2	
	3	24	36	70	"		"				
Fair Lawn,	4	30	30	70	"	September, 1884,	"	1	2	1	3
	2	*		70	"	September, 1884,	"				
Green Ridge,	12	40	34	75	"	January 1, 1885,	"	2	2	2	2
Spencer,	12	36	34	70	"	July 10, 1884,	"	2	1	2	2
Lucas,	12	41	34	85	"	November 4, 1884,	"	2	2	2	4
Richmond,						New in September, 1884,					
Pancoast,	12	38	34	75	"	October 4, 1884,	"	1	1	6	2
Jermyn, No. 4,	18	36	34	75	"	January, 1885,	"	2	2	6	2
Lackawanna Coal Company,	9	36	31	75	"	January, 1885,	"	2	2	2	2
Grassy Island Coal Company,	6	30	30	70	"	January 2, 1885,	"	1	1	2	1
	6	34	34	70	"	January 2, 1885,	"			2	
Filer's Slope,	6	30	30	70	"	Examined, but not reported according to law,	"	2	2	4	3
Filer's Slope, (fan,)	3	30	30	80	"		"				
† Dolph.											
Pierce,	6	30	30	80	"	July, 1884,	"	2	4	3	3
Eaton Breaker,	3	40	31	70	"		"	2		2	2
Eaton Ridge,	3	38	34		"		"				
Eaton Slope,	3	38	34		"		"				
Edgerton,	4	36	30	60	"	New in September, 1884,	"	1	2	2	2
Erie,	15	30	34	100	"	October 24, 1884,	"	1	3	4	4
Erie Pump Shaft,	6	30 & 36	35	100	"	October 27, 1884,	"				

Keystone Tunnel,	2	30	34	70	"	October 3, 1884,	"		1	1	1
Forest City,	6	36	34	80	"	December 31, 1884,	"		1	2	4
† Belmont,	3	30	30	60	"		"		1	1	1
‡ Brennan's.											
Totals,	365	12,066									

PENNSYLVANIA COAL COMPANY.

No. 8 Breaker, Shaft No. 1,	5	36	30	75	Both,	October 2, 1884,	"				
No. 8 Breaker, Shaft No. 8,	5	36	34	60	"	October 4, 1884,	"		1	2	2
Shaft No. 4,	7	36	30	75	"	October 3 and 4, 1884,	"				
No. 6 Breaker, Shaft No. 5,	3	36	30	75	"	October 2, 1884,	"				
No. 6 Breaker, Shaft No. 6,	6	36	30	80	"	October 3, 1884,	"				
No. 6 Breaker, Shaft No. 11,	3	36	30	75	"	October 2, 1884,	"				
No. 6 Breaker, Breaker,	3	36	30	75	"	October 3, 1884,	"		1	2	3
Shaft No. 7,	10	36	30	75	"	October 1 and 2, 1884,	"				
Shaft No. 7, (fan,)	2	36	30	75	"	October 4, 1884,	"				
No. 10 Breaker, Shaft No. 9,	3	36	30	75	"	October 4, 1884,	"				
No. 10 Breaker, Shaft No. 10, 7-foot, / Shaft No. 10, 14-foot,	6	36	30	75	"	October 1 and 3, 1884,	"		1	2	4
No. 10 Breaker, Shaft No. 10, Marcy,	6	36	30	75	"	October 3, 1884,	"				16
Central Breaker, Shaft No. 12,	3	35	36	75	"	October 3, 1884,	"				
Central Breaker, Shaft No. 13,	10	36	30	80	"	October 1 and 4, 1884,	"				
Central Breaker, Law Shaft,	11	36	30	75	"	October 2 and 3, 1884,	"				
Central Breaker, Breaker,	3	36	30	75	"	October 2, 1884,	"		1		4
Central Breaker, Breaker,	5	46	30	90	"	New,	"		1	2	4
Slope No. 2,	6	46	30	80	"	October 6 and 8, 1884,	"				16
Slope No. 4,	8 two	20	30	75	"						
Slope No. 4,	8 six	36	30	75	"	October 3, 1884,	"				
Tunnel No. 1,	3	36	30	75	"	October 3, 1884,	"		1		2
Stark Shaft and Breaker,	5	36	30	90	"	October 4, 1884,	"				2
Barnum Breaker, No. 1, 7-foot vein, / No. 1, Marcy vein, / No. 1, 14-foot vein,	10	36	30	75	"	October 2 and 4, 1884,	"				
Barnum Breaker, No. 2, 7-foot vein, / No. 2, 14-foot vein,	6	36	30	75	"	October 3 and 4, 1884,	"		1	2	4
Old Forge, Shaft,	5	36	30	75	"	October 4, 1844,	"				18
Old Forge, Breaker,	3	60	30	90	"	New,	"		1		4
Carbon Hill,	6	28	30	75	"	Not in use,	"				12
Shaft No. 14,	3	Portable,		60	"	October 5 and 12, 1884,	Fair,				
Shaft No. 2,	3	36	30	75	"	Not in use,	Good,				
Shaft No. 3,	3	36	30	75	"	October 10, 1884,	"				
No. 2 Breaker,	5	36	30	....			"		1		2
Eagle Shaft, 2	2	Tub'r		34	65	"	October 2 and 3, 1884,	Fair,	1	1	2
Eagle Shaft, 3	3	36									
	162	5,826							10	7	30

* Flue boilers. † No report made; not working in December, 1884. ‡ No report made; burned down; not working in December, 1884.

TABLE 8 —*Continued.*

DUNMORE DIVISION.

NAME OF COLLIERIES.	Number of Boilers.	DIMENSIONS. Length in feet.	DIMENSIONS. Diameter in inches.	Pressure per square inch.	Steam-gauge or safety-valve.	Date of last examination.	Condition when last examined.	Number of main rolls.	Number of pony rolls.	Number of main screens.	Number of pony screens.
Shaft No. 2, Dunmore,	3	36	30	80	Both,	September 8, 1884,	Good,				
Dunmore Screens, Dunmore,	3	36	30	80	"	October 30, 1884,	"		4	4	4
No. 3 Shaft, Gypsey Grove,	7	36	30	80	"	October 31, 1884,	"	2	2	2	4
No. 4 Shaft, Gypsey Grove,	3	36	30	80	"	October 30, 1884,	"				
No. 5 Shaft, Dunmore,	5	36	30	80	"	October 19, 1884,	"	2	4	8	12
Dunmore Breaker, Dunmore,	3	36	30	80	"	October 31, 1884,	"	2	2	4	2
	24	864									

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY.

*Diamond Locomotives,	3	2									
No. 2 Shaft,	10	40	34	75	Boston,	September 21, 1884,	Good,	2		2	2
Breaker,	4	26	30	85	Boston,	November 12, 1884,	"				
Tripp Slope,	4	30	30	65	Ashcroft,	December 13 1884,	"	2	2	2	2
Do.	3	40	30	65	Ashcroft,	December 13, 1884,	"				
Tripp Shaft	6	40	34	65	Utica,	August 1, 1884,	"				
Diamond Air-Shaft,	9	34	34	85	Utica,	August 1, 1884,	"				
Do. do.	3	40	34	85	Utica,	November 13, 1884,	"				
Hampton Shaft,	13	36	34	80	Boston,	November 12 1884,	"	2	2	4	2
Hampton Locomotive Boilers,	3			85	Boston,	November 12, 1884,	"				
Bellevue Shaft,	12	36	34	85	Ashcroft,	July 24 1884,	"	2	2	4	6
Bellevue Slope,	12	38	34	85	Ashcroft,	July 24 1884,	"				
Continental Shaft,	15	40	31	75	Ashcroft,	October 16 1884,	"	2	2	2	4
Continental Locomotive Boilers,	1			75	Ashcroft,	October 16 1884,	"				
Scranton Slope,	4	30	34	75	Utica,	October 16, 1884,	"	2	2	2	2
Do.	8	32	34	75	Utica,	September 1, 1884,	"				
Oxford Shaft,	13	40	34	70	Utica,	November 13, 1884,	"	2	2	4	6
Taylor Shaft,	12	30	34	75	Boston,	August 1, 1884,	"	2	2	3	2

Do.	4	40	34	75	Boston,	August 1, 1884,	"					
Dodge Shaft,	9	35	34	80	Boston,	December 1, 1884,	"		2	2	2	2
Do.	3	30	34	80	Boston,	December 1, 1884,	"					
Hyde Park Shaft,	6	36	34	75	Utica,	July 8, 1884	"		2	2	2	2
Do.	6	40	34	75	Utica,	July 8 1884.	"					
Central,	12	30	34	85	Cleveland,	August 27, 1834,	"		2	2	6	5
Do.	4	40	34	85	Cleveland,	August 27, 1884,	"					
One Locomotive Inside,							"					
Locomotive Airway,	6	36	34	75	America,	July 14, 1884.	"					
Archbald,	4	38	34	75	Utica,	August 1, 1884,	"		2	2	2	4
Do.	6	30	34	75	Utica,	August 1 1884,	"					
Cayuga,	12	30	34	80	Asheroft,	October 13, 1884.	"		2	2	4	2
Sloan,	12	30	34	85	Utica,	September 6, 1884,	"		2	2	2	2
Do.	6	40	34	85	Utica,	September 6, 1884,	"					
Pyne,	12	36	34	85	Utica,	September 1, 1884,	"		2	2	2	2
One Locomotive Inside,							"					
One Locomotive outside,							"					
Brisben,	12	30	34	85	Boston,	November 5, 1884,	"		2	2	2	2
Do.	3	40	34	85	Boston,	November 5 1884,	"					
Manville,	18	36	34	85	Utica,	October 21. 1884,	"		2	2	4	2
Storrs,	6	40	34	85	Utica,	August 8, 1884,	"					
	269	9,480										

DELAWARE AND HUDSON CANAL COMPANY.

Rackett Brook,	5	36	34	75	Steam-gauge,	November 1, 1884,	Good,		1	1	4	2
Coal Brook,	7	36	34	75	"	November 1, 1884,	"		1	2	6	8
No. 3 Shaft, Carbondale,	9	36	34	60	"	November 4 1884,	"					
No. 1 Shaft, Carbondale,	7	36	34	60	"	November 11, 1884,	"					
Powderly Slope,	9	36	34	60	"	November 14 1884,	"					
No. 1, Jermyn,	17	36	34	80	"	November 13, 1884,	"		1	1	2	2
No. 2, Jermyn,	4	36	34	60	"	November 3, 1884,	"		1		1	1
White Oak,	9	36	34	60	"	November 4. 1884.	"		1	2	2	4
Grassy Island,	16	36	34	80	"	November 13, 1884,	"		1	1	4	4
No. 2, Olyphant,	9	36	34	80	"	November 9, 1884,	"		1		2	2
Eddy Creek,	9	36	34	80	"	November 9, 1884,	"		1	1	4	4
Marvine Shaft,	15	36	34	80	"	November 9, 1884,	"		1	1	4	2
Leggett's Creek,	14	36	34	80	"	October 26, 1884,	"		1	1	3	2
Von Storch Slope,	26	36	34	80	"	October 26, 1884,	"		1	2	8	4
Manville Shaft,	18	36	34	80	"	October 5, 1881,	"		1	1	4	4
	174	6,264										

* Outside and one inside.

TABLE No. 8—*Continued.*

MISCELLANEOUS COAL COMPANIES—*Continued.*

NAME OF COLLIERIES.	HOISTING ENGINES.		BREAKER ENGINES.		FAN ENGINES.		PUMPING ENGINES.		DONKEY PUMP ENGINES.		HOISTING ENGINES IN MINES.		Total number of engines.	Total horse-power.
	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.		
Fairmount,	1	30	1	16	1	8			4	36	1	6	8	96
Twin,	1	60	1	45	1	40	3	140	1	8	1	45	8	338
Butler,	1	35	1	45							1	15	3	95
Mosier,	1	60	1	55	1	40	1	80	1	6	1	25	6	266
Heidelberg,	3 pair.	265			2	40			3	30			11	335
Ontario Breaker,	1	50	1	40									3	90
Hillside, now Consolidated,	1	80			1	25			7	75	2	45	12	225
Hillside, now Consolidated, Breaker,	1	80	1	75									3	155
Phœnix,	1	90	1	30	1	30			1	60			7	265
					1	20			1	30				
					1	5								
Stetler,	4	500	1	60	1	60			7	500	2	60	15	1 180
Spring Brook,	2	100	1	35					2	15	1	20	6	170
Glendale,	1	40	1	40									2	80
Dunn,	1	120	1	60	1	40			5	50	1	10	9	280
Sibley,	2	80	1	40	1	40			5	80			9	240
Greenwood Shaft,	2	120			1	40					2	40	5	200
Greenwood Slope,	2	80											2	80
Phinney Breaker,			1	60									1	60
National,	2	206	1	45	1	40			2	140			6	431
Meadow Brook,	1	100			1	26			2	90	3	67	7	283
Meadow Brook Breaker,			1	76									1	76
Amity,	2	500	1	90	1	90			2	110			6	790
Bridge,	5	185	1	40	2	20			7	35	3	25	18	305
Mount Pleasant,	2	100	1	40	1	25			4	60			8	225
Capouse,	4	325	1	40	2	80	1	135	2	40			10	620
Pine Brook,	2	70	1	60	1	60	1	70	2	45			7	305
Fair Lawn,	1	120	1	30	1	16			1	10	2	30	5	206
	1	30											1	30
Green Ridge,	2	160	1	60	1	25			3	90	2	80	9	415
Spencer,	4	150	2	195	1	40	1	80	2	12	4	80	14	557

Lucas,	2	450	1	80	1	80			4	350	2	160	10	1,120
Pancoast,	1	70	1	70	1	70			6	143	2	60	13	533
	2	120												
Jermyn, No. 4,	2	120	1	75	1	75			6	75	2	50	14	555
	2	160												
Lackawanna Coal Company,	2	200	1	75	1	75			2	100	2	50	8	500
Grassy Island Coal Company,	4	140	1	60	1	65			3	45			9	310
Filer's Slope,	2	80	1	60					4	60			7	200
Filer's Slope, (fan,)					1	60							1	60
Pierce,	2	80	1	40	1	20			1	5	1	30	6	175
Eaton Breaker,	2	51	1	25									3	79
Eaton Ridge,	2	70			2	40			1	5			5	115
Eaton Slope,	1	25			1	25							2	50
Edgerton,	1	45	1	76					1	4			3	125
Erie,	2	50	1	35	1	30	1	60	3	50	2	25	10	250
Erie Pump Shaft,	2	20							6	75			8	95
Keystone Tunnel,			1	20									1	20
Forest City,	2	80	1	35	1	25			1	15			5	155
Belmont,			1	40	1	25							2	65
Totals,	88	5,500	37	1,968	38	1,400	8	565	102	2,449	36	923	309	12,805

PENNSYLVANIA COAL COMPANY.

No. 8 Breaker, Shaft No. 1,	2	60			1	20							3	80
No. 8 Breaker, Shaft No. 8,	1	40	1	25									2	65
No. 8 Breaker, Slope No. 6,	1	30											1	30
Shaft No. 4,	1	40			1	20	1	40	2	30	2	20	7	150
No. 6 Breaker, Shaft No. 5,	1	40			1	20			1	10			3	70
No. 6 Breaker, Shaft No. 6,	1	40							2	70	1	20	4	130
No. 6 Breaker, Shaft No. 11,	1	40			1	20			1	10			3	70
No. 6 Breaker, Breaker,			1	30									1	30
Shaft No. 7,	1	40					1	120	3	90	2	40	7	290
Shaft No. 7, (fan,)					1	20							1	20
No. 10 Breaker, Shaft No. 9,	1	40			1	20			1	60			3	120
No. 10 Breaker, Shaft No. 10, 7-foot,	3	60	1	40									4	100
No. 10 Breaker, Shaft No. 10, 14-foot,							1	30					1	30
No. 10 Breaker, Shaft No. 10, Marcy,	2	60			1	20	1	40	3	50			7	170
Central Breaker, Shaft No. 12,	1	40									2	20	3	60
Central Breaker, Shaft No. 13,	1	40			1	20	2	80	1	60	2	20	7	220
Central Breaker, Law Shaft,	1	40			1	20	1	40	3	160	2	20	8	280
Central Breaker, Breaker,			1	40									2	80
			1	40										
Slope No. 2,	1	40							3	190			4	230
Slope No. 4	5	80							2	60			7	140
Tunnel No. 1,	2	40							3	60			5	100
Stark Shaft and Breaker,	1	40	1	30					1	10	4	50	7	130

TABLE No. 8—*Continued.*

PENNSYLVANIA COAL COMPANY—*Continued.*

NAME OF COLLIERIES.	HOISTING ENGINES.		BREAKER ENGINES.		FAN ENGINES		PUMPING ENGINES.		DONKEY PUMP ENGINES		HOISTING ENGINES IN MINES		Total number of engines.	Total horse-power.
	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power	Number.	Horse-power.	Number.	Horse-power.		
Barnum Breaker, No. 1, 7-foot vein,	1	40											1	40
Barnum Breaker, No. 1, Marcy vein,									1	10			1	10
Barnum Breaker, No. 1, 14-foot vein,	1	40	1	40	1	25	1	40	1	10	2	20	7	175
Barnum Breaker, No. 2, 7-foot vein,									1	10	2	20	3	30
Barnum Breaker, No. 2, 14-foot vein,	1	40			1	25			1	10			3	75
Old Forge, Shaft,	2	60			1	25	1	40	1	10	*	*	5	135
Old Forge, Breaker,	1	60	1	40					1	10			6	110
Carbon Hill,	2	70					1	45					3	115
Shaft No. 14,	2	20											4	60
	2	40												
Shaft No. 2,									1	25			1	25
Shaft No. 3,							1	40					1	40
No. 2 Breaker,			1	40									1	40
Eagle Shaft,	1	40	1	30	1	20			3	45	1	25	7	160
	43	1,220	10	355	13	275	11	515	36	990	20	255	133	3,610
DUNMORE DIVISION.														
Shaft No. 2, Dunmore,	1	90									1	40	2	130
Dunmore Screens, Dunmore,			1	90									1	90
No. 3 Shaft, Gypsey Grove,	1	70	1	70			2	70	1	9	1	40	6	349
								90						
No. 4 Shaft, Gypsey Grove,	1	70			1	35							2	105
No. 5 Shaft, Dunmore,	1	140	1	90	1	35			1	9			4	274
Dunmore Breaker, Dunmore,			1	30									1	30
	4	370	4	280	2	70	2	160	2	18	2	80	16	978

* Two locomotives hauling coal from shaft to breaker.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY.

No. 2 Shaft,	4	160	1	60			1	90	4	160	1	4	11	474
Tripp Slope,	2	60	1	60					2	60			5	180
Tripp Shaft,	2	150			1	40			1	30			4	220
Diamond Air-Shaft,					1	40							1	40
Hampton Shaft,	2	80	1	60	1	40	1	90	1	3	1	40	7	313
Bellevue Shaft,	6	300	1	60	1	40	1	90	5	105	2	100	16	695
Bellevue Slope,									3	82	1	40	4	122
Continental Shaft,	2	120	1	60	1	40	1	90	5	120			10	430
Scranton Slope,	2	80	1	60	1	40			2	40			6	220
Do.									1	30			1	30
Oxford Shaft,	4	160	1	60	2	80								
Taylor Shaft,	5	190	1	60	2	80	1	90	2	28	1	40	12	488
Dodge Shaft,	2	90	1	60			1	90					4	240
Hyde Park Shaft,	4	100	1	60							1	30	6	190
Central,	4	180	1	60	2	80	2	300	7	100	1	30	17	750
Archbald,	2	90	1	60	1	40			2	40			6	230
Cayuga,	2	120	1	60	1	40	2	240	1	20			7	480
Sloan,	2	120	1	60	1	40			6	110			10	330
Pyne,	2	300	1	60	1	40	1	150	1	10	1	20	7	580
Brisbin,	2	120	1	60	1	40			6	300			10	520
Manville,	4	206	1	60	2	80			5	80	4	50	16	476
Storrs,	1	60							2	30			3	90
	54	2,686	17	1,020	19	760	11	1,230	56	1,348	13	354	170	7,398

DELAWARE AND HUDSON CANAL COMPANY.

Rackett Brook,			1	77									1	77
Coal Brook,	1	56	1	77	1	36			3	32			6	201
No. 3 Shaft, Carbondale,	2	117			1	42	2	130					5	259
No. 1 Shaft, Carbondale,					1	36	1	60					2	96
Powderly Slope,	2	117			2	32			2	177			6	326
No. 1, Jermyn,	3	148	1	56	1	59	7	191	7	191	1	33	13	487
No. 2, Jermyn,	2	72	1	36									3	108
White Oak,	2	205	1	61	1	49			2	70			6	385
Grassy Island,	2	72	1	61	2	117	1	77	5	156	2	10	13	493
No. 2, Olyphant,	3	150	1	56			1	77	3	141			8	404
Eddy Creek,	2	117	1	61	2	117			1	6	2	10	8	311
Marvine Shaft,	3	200	1	61	1	49	1	120	2	22	2	10	10	462
Leggett's Creek,	2	200	1	61	1	49	1	77	1	10	2	10	9	497
Von Storch Slope,	5	296	1	61	2	120			3	150	2	10	12	637
Manville Shaft,	4	250	1	61	2	82			4	90	4	20	15	503
	33	2,000	12	709	17	788	7	511	33	1,045	15	103	117	5,156

TABLE No. 8—*Continued.*

RECAPITULATION.

NAME OF COLLIERIES.	Number of boilers.	Length in feet.	HOISTING ENGINES.		BREAKER ENGINES.		FAN ENGINES.		PUMPING ENGINES.		DONKEY PUMP ENGINES.		HOISTING ENGINES IN MINES.		Total number of engines.	Total horse-power.
			Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.		
Miscellaneous Coal Companies, ...	365	12,066	88	5,500	37	1,968	38	1,400	8	565	102	2,449	36	923	309	12,805
Pennsylvania Coal Companies, ...	186	6,690	47	1,590	14	635	15	345	13	675	38	1,008	22	335	149	4,588
Delaware, Lackawanna and Western Railroad Co.	269	9,480	54	2,686	17	1,020	19	760	11	1,230	50	1,348	13	354	170	7,398
Delaware and Hudson Canal Company, ...	174	6,264	33	2,000	12	709	17	788	7	511	33	1,045	15	103	117	5,156
	994	34,500	222	11,776	80	4,332	89	3,293	39	2,981	229	5,850	86	1,715	745	29,947

NOTE.—There has been an increase of 42 boilers, 47 steam engines, and 419 horse-power over the year 1883.

In addition to the above, there are working at the collieries of this district twenty-one (21) mine locomotives.

LUZERNE AND CARBON COUNTIES.

SOUTH DISTRICT.

To His Excellency ROBERT E. PATTISON,

Governor of the Commonwealth of Pennsylvania:

SIR: In accordance with the requirements of the twenty-second section of the act of Assembly, entitled "An act providing for the health and safety of persons employed in and about coal mines," I have the honor to submit for your perusal my annual report as inspector of coal mines for the South district of Luzerne and Carbon counties for the year ending December 31, 1884.

I have carefully prepared tables enumerating all the accidents in and about the coal mines of this district, marking in tabular form all accidents resulting in death and injuries to persons employed, and have also endeavored to set forth the results of my labor generally.

In reviewing the work of the past year, I feel grateful that I can say that not a single person lost his life through the explosion of carbureted hydrogen gas, and also that the number of persons killed by falls has been greatly decreased; but am sorry to have to write that accidents due to mine cars have materially increased. Justice prompts me to say that the increase in fatal accidents due to mine cars may be attributed generally to the negligence and carelessness of the victims themselves. Some of these accidents, however, could have been avoided with better discipline on the part of the men in charge, and I hope the section on transportation in the proposed new mine law will be the means of enforcing a more strict discipline among this class of employés.

There were two hundred and fifty-seven accidents reported in this district during the year 1884, through which forty persons lost their lives.

Of the forty fatal accidents, ten, or twenty-five per cent., were caused by falls; seventeen, or forty-two and one half per cent., by cars; six, or fifteen per cent., by premature blasts and miscellaneous causes inside of the mines;

and seven, or seventeen and one half per cent., were due to miscellaneous causes outside of the mines. If the same care had been taken by foremen and employés in transportation as in the mining of coal, we would be enabled to present a more satisfactory report.

Fatal accidents through falls in this district in the preceding years ranged from fifty to seventy-five per cent. of the total number.

The total production of this district for the year 1884 was 5,274,227 tons, a decrease of 392,540 tons from the previous year. The average number of days worked was 184.5 against 221.9 during the year 1883, showing that this district was idle 37+ days more in 1884 than in 1883.

For every fatal accident in this district, 131,885 tons of coal were produced, which is a good record for a district where so much robbing of pillars is done. The number of employés was 14,299, making the ratio employed per fatal accident 357+, or, in other words, about 2.8 lost their lives for every 1,000 persons employed, showing that the mining of coal in this country is nearing the standard of the older countries of Europe.

I hope that in future years more attention will be paid to the science of mining, as undoubtedly the more we know of this science the more economical and safe we can mine coal.

I have again called attention to the great need of a miners' hospital for this district, and have also referred at some length to the beneficial fund of the Lehigh Coal and Navigation Company of Lansford, with the hope that more of our companies will imitate or follow in the footsteps of this philanthropic company.

Respectfully submitted by

JAMES E. RODERICK,
Inspector of Coal Mines.

HAZLETON, *April, 1884.*

TABLE *of comparison showing the number of fatal accidents per thousand persons employed in and about the mines of this district for the years 1881, 1882, 1883, and 1884.*

YEAR.	Number of employés.	Number of deaths.	Ratio employed per death.	Number of deaths per 1000.
1881,	11,386	47	242.25	4.127
1882,	12,298	40	307.45	3.252
1883,	13,598	38	357.84	2.794
1884,	14,299	40	357.47	2.797
Averages,	12,895	41.25	316.25	3.240

TABLE *of comparison showing the different causes of fatal accidents in this district for the years 1881, 1882, 1883, and 1884.*

	1881.	1882.	1883.	1884.
Explosion of carbureted hydrogen gas,	3	1		
By falls of coal, roof, and sides,	24	24	18	10
By cars, inside and outside,	11	8	11	17
By premature blasts,	1	1	1	3
By machinery inside,	1			
By machinery outside,	3	1	2	2
Miscellaneous inside,	2	2	2	3
Miscellaneous on surface,	2	3	4	5
	47	40	38	40

General Condition of the Mines.

I am happy to be able to state that the ventilation and sanitary condition of our mines are much better than they were three years ago, and are gradually improving. This radical change resulted from the large number of fans erected, the enlargement of airways, of cross-cuts, the erection of additional doors, the division of the air into separate splits, and the constant attention that is given these matters by the mine foremen.

There are a large number of mine foremen in this district that take pride in keeping the places under their charge in good condition; who never rest easy unless all the places are properly ventilated; yet we have a few left of the old "pattern," that care for nothing if the coal can only be sent out. But as experience is a good teacher, this class of foremen can see, or ought to see, that the mines that are best ventilated and conducted are the mines that are sending out the most coal; and when these parties are satisfied that they can send out more coal when their mines are properly ventilated, I have hopes that they will get out of the old rut.

There is no longer a doubt that the division of the air currents largely increases the volume, besides taking pure air into the different places, so that men, even when employed in the bowels of the earth, can breathe of the pure air, the great free gift of the Almighty.

Drainage is somewhat neglected in several mines, and through this neglect the amount of coal that should be taken out cannot be gotten.

As it does not materially interfere with the health and safety of the persons employed, I have been a little delicate in enforcing better drainage, as I don't know that our present law requires any such action; but I have always spoken to the foremen in charge of the importance of having good drainage, if only for the additional work that the mules could perform. In the majority of mines in this district, however, we have good drainage.

Remarks on Accidents and their Causes.

Accidents in and about the mines are numerous, and are the results of various causes. Danger lurks in all the dark places inside of the mines, and hundreds of victims are caught each year.

Accidents in and about the mines can be divided into two classes' namely: the unforeseen and unavoidable accidents, and the accidents that can be foreseen and guarded against, but the number of unavoidable accidents are only a small percentage of the whole number of accidents every year.

The accidents that can be guarded against can be divided again into two classes, and called accidents through omissions and accidents through commissions.

Some of the accidents from omission on the part of the miner result from his failure to examine his working-place with a safety-lamp and otherwise every morning before he commences to work; his failure to examine his place after every blast is fired; his failure to keep a supply of timber on hand; his failure to stand a prop when he knows that it is needed; his failure to take down a dangerous piece of coal; his failure to give the blasts time to explode before going back; his failure to give himself enough time to go away from a blast; his failure to construct a safe and available manway; his failure to make a safety-hole for himself; his failure to construct a safe battery, and his failure to make an available place to escape after starting the battery, &c.

The accidents from commission are also numerous, a few of which we will here enumerate.

He often goes to the face of his working-place with a naked lamp; he takes his naked lamp on his head while examining after firing a blast; he goes right back after firing a blast before the place is settled; he knocks in one end of the powder keg; he leaves his box open; he makes a cartridge with his lamp on his head; he makes a cartridge with a lighted pipe in his mouth; he carries the cartridge back with one end of it open; he rams a tight cartridge into the hole with the butt end of his drill; he cuts off half of the match before he lights it; he lights the match before seeing that the place is free from fire-damp; he drills out a hole that has misfired; he sits and smokes under a dangerous piece of coal; he stands in front of an empty battery; he goes inside of the battery to start the coal; he will fire a blast on the top of his manway, then go up through the same one, and he will go to the face of his breast when it is working, &c.

I think that the foregoing enumeration should satisfy the miners that they can take much better care of themselves and others than they have been doing in the past. By taking proper care of themselves, they will also care for their laborers, and make mining coal much safer to their fellow-workmen in general. Especially is this true about the accidents caused by explosion of fire-damp, as often one foolhardy miner is the means of burning a large number. The above enumeration is not imaginary on my part, but based on facts that have been brought to my notice within the last three years, and there are many more accidents through omission and commission than I have been able to call to mind.

The car-runner also takes many unnecessary risks as he rides in front of

the cars, on the sides of the cars, couples them while running, does not put in the necessary number of sprags, therefore fails to control his trip, and in the excitement often falls a victim to his neglect and recklessness.

The driver starts his team on a run, then attempts to jump on; rides on the sides of the cars in narrow places; rides between them; couples and uncouples the cars while in motion; allows other persons to ride on the front end with him, in which way a large number have been killed in this district in the last three years.

The footman does not go into the safety-hole, but looks up the slope when coal is being hoisted to see how quick he can jump when he hears the coal rolling down; allows his safety-hole to get filled with rubbish; often rides up on the rear end of a car, insists on going up to turn the latches when a loaded car is being hoisted.

If we so desired, we could continue to enumerate a large number of unnecessary risks that are taken by every class of employés inside and outside the mine, but the above will suffice at present.

The inside foreman is indirectly responsible for a large number of accidents which would not have occurred had he done his whole duty. First, for not enforcing a regular system of propping; for not seeing that the miners keep a supply of timber convenient; for allowing men to construct poor manways; for allowing men to work under dangerous pieces of coal and roof when the same are known to be dangerous; for not visiting the working-places as often as practicable; for giving chambers to men that cannot take care of themselves; for giving green miners chambers in gaseous places; for not seeing that the roads and sides of roads are kept free from obstructions; for not having width enough by sides of tracks; for allowing door-boys to do the work of drivers; for allowing drivers to do the work of runners; and generally for not enforcing good discipline.

The outside foreman is responsible for allowing boys to run through all parts of the breaker; for allowing boys to climb over guard and fence-railings; for allowing boys to jump on cars and to meddle with the machinery; for removing fence and guard-rails without replacing them; for not fencing off all dangerous places; for putting green hands to shovel coal in pockets without seeing that they come out before any coal is loaded, &c.

By what I have written, the reader can see that the accidents in and about the coal mines can be greatly reduced if the parties interested would only make the proper effort.

After thus taking a general view of the different causes of accidents, we will explain the different causes of the fatal accidents in this district during the year 1884. The most prolific source of accidents this year was mine cars. Of the seventeen lives that were lost through that agency, only six can be classified with the unavoidable accidents. The others were caused by disobedience to general rules and recklessness on the part of the victims.

Next to cars come falls of all kinds, through which ten persons lost their lives, and out of that number only five could be called unforeseen or un-

avoidable accidents. The others, with a little care and forethought, could have been avoided, but I am sorry to have it to say, that several of these came to their death through their own ignorance in language and practice, having failed to follow the instructions given them by the mine foremen. It is gratifying to have to record the great falling off in the number of fatal accidents through falls, which is largely due to the mine foremen, and perhaps somewhat to the miners themselves. I hope that this good result will be the means of stimulating all parties concerned to take more care than ever of all dangerous pieces of top and sides.

Three persons lost their lives at strippings, but with a little foresight on the part of the victims themselves, two of the three accidents would have been avoided.

Two were killed by machinery on the surface, and if these two persons had been attending to their own duties, they would not have suffered as they did.

Two lost their lives by runaway cars on slopes, caused by the breaking of ropes, yet these two could have escaped, as did all the other persons that were with them, had they understood the danger or been gifted with ordinary intelligence. The bad place in one of the ropes that broke could not have been detected, as it was inside of the cone; in the other, it was criminal negligence on the part of the outside foreman, who should have been punished for his neglect. Yet the coroner's jury exonerated him and brought in a verdict of "accidental death."

Of the remaining six fatal accidents, two only could be termed as unavoidable or unforeseen accidents, the other four having come to their death as if they were hurrying to meet it.

To prevent these suicidal accidents, persons must be schooled to care for themselves, and to do this the standard of intelligence must be raised among our mining population. Then, and not before, can we hope to lessen the number of these accidents.

The "night school bill" was a step in the right direction, and it is gratifying to all persons that have the welfare of working classes at heart to witness the great interest that is taken, generally, by parents and children in this matter. Yet many parents and children do not seem to appreciate this great advantage, and for the sake of these careless parties, compulsory education should be enforced, so that boys that are compelled to work every day would have to attend the night schools. This neglect of attending school on the part of the children can be generally attributed to the ignorance of the parents who did not have these advantages in their young days, and who think that their children can get along as they have done.

TABLE No. 1.—*Exhibits the number of deaths in the different classes of employés inside and outside of the mines, and the causes thereof, for the year 1884.*

Causes of Deaths Inside of Mines.	Miners.	Miners' laborers.	Drivers and runners.	Company men.	Helpers or patchers.	Total.	Total from all causes.
By falls of coal sides and roof,	7	2	. .	1	. .	10	
By mine cars,	. .	. .	3	7	3	13	
By blasts and powder explosions,	3	. .	. .	. .	. .	3	
Miscellaneous inside,	2	. .	. .	1	. .	3	
Total inside,	12	2	3	9	3	29	29

Causes of Deaths Outside of the Mines.	Laborers.	Slate-pickers.	Total.	
By machinery,	. .	2	2	
By falls at strippings,	3	. .	3	
By mine and railroad cars,	4	. .	4	
By falling in breakers,	2	.	2	
Total outside,	9	2	11	11
Total inside and outside,				40

TABLE No. 2.—*Gives the total number of each class of employés, the number of deaths in each class, and the ratio of each class employed per life lost inside and outside the mines of this district during the year 1884.*

Classes of Employees Inside of the Mines.	Number of each class employed.	Number of deaths in each class.	Ratio employed per death.
Miners,	3,286	12	273.83
Miners' laborers,	2,006	2	1,003
Runners and drivers,	826	3	275.33
Patchers or helpers and door-boys,	265	3	88.33
Company hands otherwise employed,	1,441	9	134.77
	7,824	29	269.79
Classes of employés outside of the mines:			
Laborers,	1,986	9	220.66
Slate-pickers,	2,879	2	1,439
All other employés,	1,610		
	6,475	11	588.63

TABLE No. 3.—*Gives the total number of each class of employés, the number of injuries in each class, and the ratio of each class employed per injury inside and outside of the mines of this district for the year 1884.*

CLASSES OF EMPLOYEES INSIDE OF THE MINES.	Number of each class employed.	Number injured in each class.	Ratio employed per injury.
Miners,	3,286	89	36.92
Miners' laborers,	2,006	30	66.86
Runners and drivers,	826	29	28.5
Patchers or helpers and door-boys,	265	9	29.44
Company hands otherwise employed,	1,441	27	160
	7,824	184	42.52
Classes of employés outside of the mines:			
Laborers,	1,986	23	86.34
Slate-pickers,	2,879	7	411.2
All other employés,	1,610	3	536.66
	6,475	33	196.22

TABLE No. 4.—*Gives the number of accidents, the number of each class, and the causes thereof during the year 1884.*

CAUSES OF ACCIDENTS.	Accidents, but no bones fractured.	Back fractured.	Collar-bone fractured.	Shoulder-blade fractured.	Thighs fractured.	Legs fractured.	Ankle fractured.	Feet fractured.	Toes fractured.	Knees fractured.	Arms fractured.	Hands fractured.	Fingers fractured.	Ribs fractured.	Jaw-bone fractured.	Arm cut off.	Hip dislocated.	Ankles dislocated.	Shoulders dislocated.	Arms dislocated.	Totals.
By falls of all kind,	52	.	1	.	1	11	.	1	2	.	4	2	2	2	.	1	1	.	.	.	80
By cars,	25	.	.	1	1	5	1	3	3	.	6	1	8	2	1	.	.	1	1	.	59
By explosion of gas,	20	.	.	.	.	1	.	.	.	.	.	.	.	2	.	.	.	.	.	.	20
By premature blasts,	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6
By explosion of powder,	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4
By machinery,	1	.	.	.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	2
At strippings,	.	.	.	.	1	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	5
Miscellaneous,	22	1	.	.	1	5	1	.	.	1	3	2	2	2	.	.	.	.	.	.	41
	127	1	1	1	4	25	3	4	5	1	13	5	12	9	1	1	1	1	1	1	217

A Hospital Needed at Hazleton.

This is the third time for me to call the attention of the public and the philanthropist in our midst to the great need of a miners' hospital at this mining center, but so far no person has taken any initiatory step in the matter.

Several of the present members from Luzerne promised, in case of their election, to bring a bill before this Assembly, asking State aid for the erection of a hospital in this town or its immediate vicinity; but so far they have done nothing, showing me that they gave nothing more than a political promise. I don't want to find fault with any appropriation made by the present Assembly to the Scranton, Wilkes-Barre, and Ashland hospitals, as undoubtedly they needed all that was given, and, in some cases, much more; yet I venture to say that this region stands in need of such help as much as the afore-named more fortunate places.

Ashland is entirely an out-of-the-way place for this district, as an injured person can be conveyed to Philadelphia as soon, and with less discomfort than he can be conveyed to Ashland. Wilkes-Barre is nearly seventy miles away from us by rail, and with the facilities we have to go there, if it was desirable to send a patient there, the chances are that he would have to wait from two to four hours for the trains. Sending any injured person to Scranton is out of the question. The majority of the injured from this district are sent to the Pennsylvania Hospital, Philadelphia, and a few to St. Luke's Hospital at South Bethlehem. Some of the companies on the North Side send their injured to Coxe Bros. & Co.'s hospital at Drifton.

This private hospital has already done a great deal of good in saving many an unfortunate with crushed limbs hours of torture and agony, which could not be avoided if they had to be sent to distant hospitals. It has, I think, saved the lives of several that could not have endured the tedious ride to Philadelphia or elsewhere.

Herewith, I present a brief statement of the Drifton Hospital for the year 1884:

Number of patients in hospital January 1, 1884,	8	
Number of patients admitted during the year,	69	
		77
The number of discharged cured was,	50	
The number of discharged improved,	6	
The number of discharged unimproved,	1	
The number of discharged by request,	2	
The number died during year,	12	
		71
The number in hospital December 31, 1884,		6

Nativity of Patients.

Hungary,	29	Germany,	1
Ireland,	13	Austria,	6
United States,	10	Poland,	1
Wales,	6		
Italy,	3		69

Of the above 69, 52 were employed by Coxe Bros. & Co., and 17 were employed by other companies.

Rules for Establishing and Administering the Beneficial Fund of the Lehigh Coal and Navigation Company, Lansford.

This fund shall be created and maintained by the following contributions, to be made monthly:

The Lehigh Coal and Navigation Company will pay into it one cent for every ton of coal produced at its mines. The inside workingmen employed on its property will pay into it one per cent. of their earnings, and the outside workingmen will pay into it one half of one per cent. of their earnings, but no one shall pay more than one dollar in any one month.

All contributing workmen who may be accidentally injured when actually engaged in the service of the company shall be entitled to the following benefits, to be paid out of the fund:

In case of an accident so received which shall cause disability lasting more than one week, the person injured shall receive a sum equal to one half the weekly wages of the class of workmen to which he belonged for each week of such disability, but no one so injured shall receive from this fund such benefits for longer period than six months for any one accident.

In case of accident so received which shall result in death, $30 will be paid for funeral expenses, and a sum equal to one half the weekly wages, as in the case of injury, will be paid the legal heirs of deceased for one year from the date of the accident.

These benefits will be paid only on the statements of the proper foreman, that the injury was received while in the service of the company, and on the certificate from the physician of the fund, in case of accident, that the accident was a disabling one, and in the case of death, that the death resulted from the accident and not from disease. In case of accident, the certificate of disability must be renewed every two weeks. * * * * The fund thus established is believed to be ample to meet all claims arising from accidents to the contributors, and if, as is hoped, there shall be more than is required under this plan, the benefits will be increased, as from time to time the trustees may think prudent.

The Lehigh Coal and Navigation Company, in making this contribution and establishing this fund, desires to relieve the suffering which accidents cause among its workingmen, and to render unnecessary the collections

which make a heavy tax on the benevolent, and also to promote the growth of the kindly feeling which now exists between the company and the men engaged in its service.

This fund commenced January, 1884, and herewith is a monthly statement of receipts, benefits, and expenses for each month during the year:

MONTHS.	Contributed employés.	By company.	Total contribution.	Benefits paid.	Expenses.	Total benefits and expenses.	Cash balance.
1884.							
January, .	$423 45	$602 25	$1,025 70	$104 57		$104 57	$921 13
February, .	505 75	496 29	1,002 04	249 42	$99 75	349 17	1,574 00
March, . . .	497 84	565 95	1,063 79	663 68	25 00	688 88	1,948 91
April, . . .	578 61	605 64	1,184 25	850 81	28 25	879 06	2,254 10
May, .	788 07	1,011 40	1,799 47	1,011 88	25 00	1,036 88	3,016 69
June, . . .	723 70	838 03	1,561 73	693 15	25 00	718 15	3,860 27
July, . . .	602 08	638 17	1,240 25	651 63	25 00	676 63	4,423 89
August,	742 00	853 58	1,595 58	878 81	25 00	903 81	5,115 66
September,	898 10	1,092 29	1,990 39	879 12	25 00	904 12	6,201 93
October,	768 24	826 27	1,595 11	833 54	25 00	958 54	6,938 50
November,	887 78	993 78	1,881 56	1,147 11	40 00	1,187 11	7,632 95
December, .	837 99	827 74	1,665 73	1,302 30	54 46	1,356 76	7,941 92
Totals, . .	$8,253 61	$9,351 99	$17,605 60	$9,266 22	$397 46	$9,663 68	$7,941 92

This statement speaks for itself, and is well worthy of the perusal of all parties interested in mining, employers as well as employés, and it is to be hoped that this is only the beginning of the era of good feeling between capital and labor. It is also to be hoped that this fund will gradually increase until the trustees will think it prudent to increase the benefits or modify the rules in some way that the widows and orphans of deceased members will have the benefit for a longer term than one year, unless provided for otherwise.

By looking over the reports of the inspectors for the year 1883, it will be seen that only three persons lost their lives in and about the mines of this company, and the average number of fatal accidents during the last six years (exclusive of 1884) is only a fraction over five, yet during the past year eleven persons lost their lives through accidents in and about the same mines or collieries, and the year 1884 will be remembered by this company and its employés as a very unlucky period in the history of years. The curious may ask the reason for such an increase in the fatal accidents in and about the mines of this company. I am not prepared to say that I can explain it, yet I do know that the officials of this company have taken as much care of their employés as they have done during any of the last four years, and I can also testify that the mines of this company will compare favorably with any in the anthracite regions. But whatever was the

cause of the increase in fatal accidents, the beneficial fund has demonstrated its ability to do even more than was required of it in the most unlucky year for this company in the last decade.

We cannot estimate the amount of good this fund accomplished in one year of its existence, and only in operation under one company; but what is that compared with the good results that would be derived if the companies and their employés in the anthracite coal regions would adopt a similar system!

A shipment of thirty million tons would mean three hundred thousand dollars from the companies; then the men would pay at the same ratio some two hundred and sixty thousand dollars, making an annual fund of five hundred and sixty thousand dollars, a sum equal to the need of all the unfortunates about our coal mines. I hardly think there is a single company that would refuse to donate one cent for every ton of coal sent to market towards helping their unlucky employés to tide over the dark days (which unluckily come upon a large number of our mining population every year) if the employés would only get at it in a business-like manner, and also show a willingness themselves to do their share.

Coxe Bros. & Co. have been doing even more than this to their employés, which is explained in my last year's report. In answer to an inquiry that company wrote, they did not want to publish the amount paid out of their beneficial fund as it was purely a private matter.

But my impression is that the proper way is for the companies and the men to pay in about an equal share, as certainly it cannot be any great hardship for any employé to pay one per cent. of his earnings; then, when he needs help, he will feel that he has a claim for help, as he has been paying his money in support of said fund.

I hope before another year rolls by we shall have the necessary number of these beneficial funds in successful operation throughout all of our districts. I think that nothing better can be done by companies and men to keep and foster good feeling and generosity between employer and employé.

I think the companies will derive more benefits from these funds than the one cent per ton donated; but to the workingman it would be a perpetual source of relief, knowing if he is injured his dear ones will be cared for.

Mine Inspectors' Reports.

It is very discouraging for the inspectors to ask for any information about coal shipments, number of employés, or for any matter that the law does not state definitely the companies must furnish, as the number of yearly reports generally sent each inspector is not sufficient to give one to each official that takes the trouble to give the inspectors the desired information. The reports have been generally scarce, but never to my knowledge have they been as scarce as for the year 1884. I am informed that the inspectors had each two copies sent them through the courtesy of Mr. McCamant, therefore had no copies for distribution as usual.

I have been also informed that twenty-five hundred copies of said reports were printed instead of five thousand, as has been the custom heretofore. But where did the twenty-five hundred copies go? is often asked. I will here state, on the authority of one of the members, that they were divided among the members of the House and Senate, thus cutting off the inspectors' small quota of about eighty copies each, which have been generally sent them in the years gone by. If the inspectors had received their usual number, the members would still have two thousand copies to be divided among themselves.

From the demand for these reports among the officials and workmen, I think that each inspector should have at least five hundred copies for distribution. Five hundred copies for each inspector would be only three thousand copies for the several coal counties in this great Commonwealth.

If the State cannot afford to give this number away, then they should be printed and sold at cost, so that every person that desired a copy could be supplied.

In my humble opinion, the State of Pennsylvania receive revenues enough from the coal mines and railroads in these coal counties to compensate her for the trifling expense of printing the reports of its inspectors of mines in such quantities that the men connected with the mines can be supplied with copies.

If these reports have any value whatever, except for their statistical information, they are certainly valuable to the persons who are employed in and about the mines.

Boiler Explosions.

There is a great deal of excitement these days over boiler explosions, and the law is severely condemned (by designing ones) for not being stringent enough. Let us look into the matter, especially as connected with the district, which has the largest number of steam-boilers in use of any of the anthracite districts as far as published in the reports of the inspectors.

In the report for the year 1882, we can see that the Lackawanna or Eastern district had 908; the Wilkes-Barre or the Middle district, 884, and the Hazleton or South district, 1,215, which number has increased by this time to about 1,300.

Of this large number of boilers in this district, only two exploded since the year 1880, and there was no life lost in either case.

Attending these boilers there are about three hundred persons, including firemen and helpers, and of that number there was not a life lost during the last four years, which I think is a remarkable showing; and if I am not greatly mistaken it is a better showing than can be found in any manufacturing interest in the State, when the number of men and boilers are compared. Generally speaking, the present system of examining boilers is a good one, as few men could be found who would take an oath that a boiler is safe when they know to the contrary, but the greatest danger comes

from incompetent examiners, "who swear that they are competent," and also swear "that the boilers are safe," possibly when not safe, and from these incompetent examiners the most danger is apprehended. All the boilers in and about the coal mines of this district are invariably examined twice a year at least, and their condition reported to the inspector, as required by the law, and said reports are kept with the records of the office.

The danger from incompetent examiners is generally feared from individual operators, who, to save a few dollars, have one of their own men, who is not a boiler-maker, and perhaps not very competent, to do the work. In the absence of a practical boiler-maker (whom the larger companies generally have around their works) the more judicious and safe way would be to get a regular boiler-maker to do the examination, then reliance could be put on the sworn statement, and the lives of employés and the property of the company would be under no risk, that is, no extra risk, as all who have had practical experience with steam-boilers know that there is some mystery in connection with some boiler explosions which cannot be accounted for even by experts.

The part of section thirteen, in the law of 1870, relating to steam-boilers, is very brief, and reads thus: "All boilers used for generating steam in and about coal mines or collieries shall be kept in good order, and the owner or the agent thereof shall have them examined and inspected by a competent boiler-maker, or other qualified person, as often as once in six months, and oftener if needed, and the result of every such examination under oath shall be certified in writing to the inspector of the district."

The oath sworn to by the examiners in this district reads as follows:

. . . . . .

Luzerne county, ss:

. . . . . , being sworn, says that he has carefully examined the above boilers, internally and externally, and that he is competent and fully qualified to perform the duties as is required by section thirteen of the ventilation law, and that the foregoing statement is correct according to the best of his knowledge and belief.

Sworn and subscribed before me, one of the justices of the peace of said county, this . . day of . . . . . , 18 8 .

. . . . . , *J. P.*

The proposed new mine law relating to boilers reads nearly the same as the old, but furthermore provides: "That every fireman in charge of boiler or boilers for the generation of steam shall keep a constant watch over the same. He shall see that the steam pressure does not, at any time, exceed the limit allowed by the outside foreman or superintendent. He shall frequently try the safety-valves, and shall not increase the weights on the same. He shall maintain a proper depth of water in each boiler, and if anything should happen to prevent this he shall report the same without delay to the foreman, for the time being in charge, and take such action as

may, under the particular circumstances, be necessary for the protection of life and the preservation of property."

It can be seen that the proposed new mine law provides in detail for the care of steam-boilers by the employè as well as by the employer, and if both will only do their duty there will be no reason for boiler explosions in and about the anthracite coal mines of Pennsylvania.

IMPROVEMENTS MADE AT THE VARIOUS COLLIERIES DURING THE YEAR 1884.

The improvements in this district during the past year were not as extensive as usual, owing undoubtedly to the small margin of profit made by the companies, resulting from the small number of days worked, a less average number than in any of the districts.

A. Pardee & Co.

The Cranberry breaker had an additional wing put to it, thus doubling its capacity. A new engine-house was built on the north side of the breaker; a new pair of 18″ × 36″ engines, with a twelve-foot drum; four 33″ × 30′ cylindrical boilers were erected, and a new 11″ × 20″ × 36″ steam-pump was put in place to throw water on the breaker. With this additional plant, Cranberry breaker and machinery can be considered in the front rank. A new plane was made to take the coal down from the old Mammoth workings, and other improvements are being carried on which will largely increase the production of this colliery.

Hazleton mine generally has been improved during the year, and a new Allison pump, 16″ × 36″ × 72″, was put in place in the lower lift.

A new plane was driven through a rock fault at Sugar Loaf, through which a large area of the best of coal is made available.

Coxe Bros. & Co.

Beaver Meadow is one of the oldest mining towns in this district, if not in the State; therefore, it may not be ill-timed to write a few notes about it.

These collieries have been idle since 1877 until a few years ago, when the present company took hold of them. It can be said to their credit, that they have completely revolutionized the old system of working by sinking new slopes, driving new tunnels, stripping a large area, and developing the place generally, showing beyond a doubt the existence of a large amount of coal remaining in the old workings, and also the existence of other veins unknown here before. I think I can safely say that the mines of Beaver Meadow will produce in the future much more coal than they have in the past.

The Parlor vein, in slope No. 1, which has hitherto appeared to be a part of the Mammoth vein, separated from it by only a few inches of slate, now has been found to separate from it more and more as it is proved north and west. It is at present a distinct bed from five to five feet six inches in thickness, covered by a sand rock ranging from six to eight feet in thickness.

The main hoisting slope in the Wharton, which was graded diagonally across the pitch in the basin slope of No. 2, is nearly completed. It has

been timbered and graded as well as any slope in the State, which reflects great credit on the inside foreman.

The coal from all the workings below the level of the stripping will be brought to this slope, which will also be a convenient outlet for the Mammoth coal from the old Greenfield, Quakake, and Temperance. When this slope is completed, and the proposed addition to the breaker made, this colliery will produce a large amount of coal annually, quite as much, if not more, than any colliery in this district.

Cross Creek, No. 1.—Considerable work has been done in the faulty part of the Buck Mountain vein west of the slope, where a good bench of three to four feet of bottom coal is separated by from four to six feet of refuse from a good top bench varying from four and one half to six feet in thickness. Midway between the B and Mammoth, a fine vein of coal four and one half to six feet in thickness has been developed by a tunnel. It seems too good to be a split of the Gamma, although its close proximity to it for a long distance (proven half a mile west by a diamond drill-hole) would justify its being so considered.

Cross Creek, No. 2.—There have been no new developments in this basin. The workings towards the east have been extended to the boundary pillar between this mine and Highland, No. 1. This pillar, one hundred feet in width, will extend across the basin, and is calculated to withstand the pressure caused by the robbings along the line. This pillar was located by mutual agreement between the adjoining landowners to the best advantage to both parties, regard being paid to the waves and faults in the strata, so that the loss of coal left standing for protection may be considered a minimum. This, undoubtedly, is a move in the right direction, and other landowners and operators would do well to follow.

Gowan.—No new developments have been made. The gangways east and west have been continued during the year, and, according to present appearances, this colliery promises to repay all the trouble and expense it cost during the first years of its operation. The production at present is limited by the capacity of the breaker; therefore, a surface railroad about two miles in length is being constructed to take the surplus coal from this mine to the new breaker which is being built at Derringer; the capacity of which has been increased with a view to this.

Lehigh Coal and Navigation Company.

No. 3.—Extensive improvements have been made at this place, which will largely increase its production the coming years. The old No. 1 tunnel has been re-opened, the length of which to the north dip of the Mammoth is three thousand three hundred feet. The west gangway in same vein and dip has been re-opened and enlarged for six hundred feet, and the east gangway on same dip and vein was also re-opened a distance of seven hundred feet.

A proving-hole, (with the necessary bore-holes in advance,) four hundred

and twenty-three feet in length, was driven eastward towards the old Hacklebernnie workings, through which it is intended to drain the major part of the water from this old mine. An opening five hundred feet in length, whose area is fifty feet, was made to the surface through the Red Ash in the west gangway south of the shaft for the purpose of ventilation, which will act as an inlet to this part of the mine.

A six-inch diameter hole was bored from the surface through the overlap to the Mammoth on the west side of the shaft, which will act as an intake, and is supposed will be the means of clearing out all the standing gas from this part of the mine. The length of the hole is three hundred and twenty-four feet.

The managers of this company deserve great credit for their endeavor in clearing this section of the mine of carbureted hydrogen gas, and, indeed, it was a problem hard to solve, as the place had been worked in such a way as to make it impossible to carry any quantity of air up to this overlap. The standing gas here was a constant danger to all persons going down this shaft, and I must admit that it is a great relief to my mind, as it must be to the officials in charge, and also a great safety to the men.

A locomotive road from breaker to No. 1 tunnel was graded and laid with forty-pound rails, with a gauge of forty-two inches, and the length about two thousand feet.

No. 5.—The mining of coal was commenced in the Red Ash during the past year, to ventilate which a twelve-foot diameter fan, driven by a hot-air engine, was erected at the outcrop. This fan gives ample ventilation when driven at the proper speed.

No. 6.—A new shaft was commenced at this place in the month of March, which was sunk to the depth of one hundred and fifty-four yards by the end of December. The inside dimensions of this shaft are eleven by twenty-three feet.

The intention at present is to sink the shaft down to the Red Ash, and from that point to tunnel to the Mammoth. A second outlet for this shaft is being sunk in the Red Ash on the north side, the size of which is sixteen by nine feet, and was down December 31, 1884, to a depth of one hundred and sixty-three yards.

A waterway one hundred and twenty-five yards in length was opened into the shaft through one of the top seams of coal, which will relieve the pumps of about one hundred feet of a lift.

G. B. Markle & Co.

During the past year, this company has put in steam heaters through all their breakers, which adds greatly to their safety from fires from stoves.

No. 2 breaker was burned down on the 24th day of March from some unknown cause. A new breaker was immediately started and constructed with all the modern improvements. This breaker will compare favorably with any in the district, although small in size compared with several. There were about three hundred and twenty thousand feet of lumber used

in its building. Ten-inch main steam pipes were placed over the boilers, and an eight-inch steam pipe was laid down the pumpway to the first lift.

This company is prepared, if supplied with cars, to largely increase their shipments the coming year.

Upper Lehigh Coal Co.

No. 2.—A new breaker was completed and put in operation March 10, 1884, to replace the breaker that was burned down September 11, 1883, by a spark from a locomotive.

This is a mammoth concern, where over seven hundred thousand feet of lumber was used in its construction, and can be called a model breaker, being complete in all its details. It was built on the most approved plan, with oak sills and pine framing. The capacity of this breaker is about fifteen hundred tons per day. There are nine jigs with engine attached, eight screens, one shaker, four sets of rolls, and one set of crushers placed in this breaker. A new pair of hoisting engines, 18″×30″, and an 18″×30″ engine was put in place to run the breaker.

A new duplex steam pump was put in No. 2 slope, size 12″×26″×48″, having a capacity of about fifteen hundred gallons per minute. To convey this water to the surface, six hundred feet of twelve-inch pipe were put in.

The subterranean slope is down about six hundred feet on an average pitch of five degrees, and is still being sunk.

Linderman, Skeer & Co.

During the past year, West, No. 1, was continued to the bottom of the second lift, a distance of about one hundred yards, and the east and the west gangways advanced sufficiently to open thirty-five breasts.

A new improved pump, 30″×12″×36″, with a capacity of twelve hundred gallons per minute, was put in this slope.

East, No. 3.—A new sixteen-foot diameter fan was erected and driven by a 14″×20″ engine, which has a capacity of 60,000 cubic feet per minute.

Humboldt.—A rock slope was driven to the surface north-west of the office, at which there is a sixty horse-power engine and four 33″×30″ cylindrical boilers placed, with engine and boiler-house complete.

M. S. Kemmerer & Co., Sandy Run.

No. 3.—An inside slope was sunk about twenty-seven hundred feet west of this place for fifty-five yards, on an average pitch of twelve degrees, when the vein suddenly took a pitch of eighty degrees; therefore, the gangways east and west turned, and in good coal.

The coal from this slope is hoisted by a pair of twelve-foot engines, placed on the surface. The rope from the drum goes down through a six-inch diameter bore hole, and the steam is furnished to the pump through another bore hole, the length of each being about one hundred and thirty feet. The steam is furnished by two new 36″×36′ cylindrical boilers.

No. 4.—A new eight-foot diameter iron fan, driven by a ten-inch engine

was placed at the second opening, on the surface. Although the fan is small, yet it gives good results, and gives ample ventilation. The workings of this company are in good condition throughout.

M. S. Kemmerer, Pond Creek.

The improvements here consist of a subterranean slope sunk on the north dip of the vein, which reached the basin at eighty-three yards, on an average pitch of sixteen degrees, and the second opening was driven on the south dip into the west gangway of slope No. 1. This subterranean slope was extended to the surface, a distance of two hundred and eleven yards, at the top of which a 20″×18″ engine was placed. It is proposed to hoist all the coal up this slope, and then convey it to the Sandy Run breaker over a narrow guage railroad, a distance of about two miles.

By present indication, more coal will be shipped from this mine the coming year than in any previous year.

Harleigh, Kemmerer & Co.

The improvements at this place have been very extensive during the past year, which add to the production and also to the safety of the men.

No. 2 breaker was entirely overhauled and greatly improved, making it a good breaker with a capacity of between six and seven hundred tons per day.

A tunnel was driven from the Mammoth to the Wharton from a point near Gartnell's Hole on the south side of the basin, whose length is two hundred and twelve feet. A tunnel was driven from the Mammoth to the Wharton near No. 4 slope. A rock gangway, following a six-inch leader of coal, was driven eastward for a long distance on the north side near the basin in the Wharton, and, at a convenient point, a tunnel of one hundred and twenty-six feet in length was driven to the Mammoth.

As is well known, the extensive caving in of the Mammoth vein at this place in 1877 partly destroyed the mine, and few mining men had any hopes that it could ever be re-opened successfully, but the pluck, energy, and forethought of this company have demonstrated that most any caved-in mine can be re-opened if handled by judicious and competent superintendent and foreman.

The driving of these three tunnels has given the company a great advantage by reducing the transportation expenses. By one of them they have been enabled to abandon No. 4 slope and blow out sixteen old boilers, and the coal from the robbing and stripping from the west end of the basin can be conveyed inside instead of on the surface as formerly. The other two tunnels have enabled them to do away with counter-chutes and runs, and by the three tunnels combined they can bring all the coal back to the foot of No. 1 slope, when it can be hoisted directly to the breaker.

But above all the pecuniary gains to the company, they have opened avenues of escape for the employés in case of a general caving in of the old workings, which may take place at most any time, as the place has been robbed for the last seven or eight years.

A new 36″×16″×72″ Allison pump was put in at the bottom of the Wharton, with a capacity of about twelve hundred gallons per minute, and, to convey this water to the surface, a line of 16″ column pipe was laid.

A new boiler-house was built near No. 1, in which are placed twelve 36″×36′ new cylindrical boilers of the most approved pattern. These new boilers are doing the work of twenty-six old boilers, and are fired with the fine coal dirt, using strong blowers, which is also a great saving to the company.

A new boiler and engine-house was erected at No. 3. A 20″×36″ engine and six 36″×36′ new cylindrical boilers were put in place. This old slope has been re-opened for about six hundred feet.

About thirty thousand tons of Mammoth coal have been uncovered, part of which is being taken to No. 1 at present. A large amount of coal can be made available by stripping on this property. A slope was sunk on the south side of the main basin in the Buck Mountain vein a distance of about two hundred and ten feet. The average thickness is about four feet. This is the first slope sunk on this vein west of Jeddo, which is about five miles east of it, leaving a large area of coal land unexplored, which will be improved if the vein proves workable here, and at present the prospects are encouraging.

It may be worthy of note to say that the mine-houses have undergone great repairs during the past year.

Tresckow, Lehigh and Wilkes-Barre Coal Company.

No. 7. A new pump 18″×9″×38″, with a capacity of about eight hundred gallons per minute, was put in place. A pair of 12″×24″ engines were erected on the surface to sink a subterranean slope, the rope running down through a hole made for the purpose. A twelve-foot diameter fan was put up at No. 9, which, at fifty revolutions per minute, produces twenty-five thousand cubic feet of air, which is ample for the persons employed here.

Coleraine.

A tunnel was driven north in slope No. 1, from the Wharton to the Buck Mountain, which was pierced at four hundred and fifty feet. When the tunnel cut the vein it was only about two feet in thickness, but in opening the gangways it was found in good condition, ranging from five to seven feet.

The finding of this vein of excellent coal here, was very opportune for this colliery, as great doubts existed of its being workable here, and if the vein continues good it will add greatly to the value of the Jeansville collieries on the west, and Beaver Meadow on the east.

The Stout Coal Company, Milnesville.

The water was pumped out of the old No. 1 basin, and a large quantity of the Mammoth coal has been made available.

The intention at present is to strip or uncover the coal all through the basin.

It is estimated that nearly two thirds of the coal was left in this mine, which could not have been removed on account of the shallow covering.

Black Ridge. J. S. Wentz & Co.

This company leased this colliery during the past year, during which time they have made extensive explorations, including a slope on the south side of the north basin, which was sunk about one hundred and twenty feet and abandoned.

At present a trial slope is being sunk on the north side of the same basin, in a vein about seven and one half feet in thickness, having a pitch of 48°.

There is a large area of coal land here, but so far has not proved a good investment for the operators.

Fatal Accidents from Falls.

ACCIDENT No. 72.—Michael Bruchick, Hungarian labor, was fatally injured by a fall of rock in the Wharton seam, at Humboldt, on the 10th day of April, and died at the hospital on the 13th.

In the investigation, I found that the mine foreman called the miner's attention to a bad piece of roof, and instructed the miner how to make it safe. Instead of following these instructions, the Hungarian miner drilled and fired another hole, and then went back to eat his dinner, taking the laborer along.

After his meal, the laborer went away from the miner, and for some unknown reason went back to the breast, and while there alone the rock fell on him as stated.

The miner testified that the deceased had no right to go back to the breast before he went with him, as he had told him that the rock was dangerous. The miner was right, yet had he followed the foreman's instructions, the accident could not have happened, and I came to the conclusion that this man lost his life through the gross neglect of the miner.

ACCIDENT No. 86.—Henry Marshman, English miner, aged forty-six years, was instantly killed by a fall of top coal in the B seam, at No. 2, Drifton, on the 25th day of April.

This is one of those unfortunate and unforeseen accidents that cannot always be guarded against. Deceased was mining coal for a contractor named Thomas J. Watters, who had been in this breast with the deceased the day of the accident, and ordered him not to blast any more of the top coal down, as the place was nearing the surface. He also ordered him to prop the top coal when the bottom was blasted out.

In the investigation, Hugh Coleman, the laborer, testified that, after loading a car, he went up to the breast, and near the face of it, and just as he sat down a little dirt fell on him. He got up and asked deceased how the top coal was. The deceased took his drill and sounded it, and pronounced it "all right," but just as he had said "all right," the top coal gave a crack; Coleman made a jump back and deceased made a jump for the props, but was caught by the falling coal and crushed terribly.

In looking over this place, I had to say that I considered deceased a good, careful miner, as the appearance of the breast so indicated. There were three rows of props put in, although the breast was only twenty-six feet wide, and the last props were within three feet of the top coal that fell, and there were props ready to be put under the top coal that fell as soon as the cut in the bottom coal was blasted out.

The reason for this sudden fall of coal was a rotten slip running parallel with the breast close to the pillar and another coming in at right angle with it near the face.

Accident No. 95.—John Hanlow, Irish, laborer, twenty-five years of age, was instantly killed by a fall of slate at Tresckow, No. 7, on the 7th day of May.

Deceased was engaged as a company laborer, and was sent this day with a miner to do some rock-blasting where a gangway was to be widened. As the rock was not considered very hard, it was thought it could be bored with a drilling-machine. A hole had to be made to fasten the machine, which was then put in place, and a hole bored to the depth of six inches, when hard rock was reached, requiring great power to penetrate, which, being applied, brought such back pressure against the slate when the machine was fastened that it caused it to part from the rock. A few minutes prior to the accident, the mine foreman came to the place and stood right under the piece of slate that fell. A trip of cars came along and the foreman, deceased, the miner, and two other men that happened to be there stepped aside to let the trip pass. Suddenly a large piece of slate fell, knocking deceased to the ground and killing him instantly. The piece measured about twelve feet square, and ranged from three to six inches in thickness.

In the examination, I found that the mine foreman and the miner had examined the place the day previous to the accident and found the slate solid. My version of the accident is that the back pressure from the machine caused the slate to break away, and the crack was not heard by deceased or miner on account of the noise made by the cars passing. The jury brought in a verdict of accidental death.

Accident No. 118.—Michael Maddle, Austrian, miner, aged twenty-seven years, was instantly killed by a fall of rock in the B seam, at Derringer, on the 16th day of June.

Deceased was one of two miners working a breast, and had fired two blasts in the top coal that morning, which started the top to work and crack. The deceased was notified by the timberman that he should not go into his breast until the rock fell. His partner also requested him not to go, but, not heeding any warning, he went back and commenced to make a hole for a prop, when the rock fell on him, with result as stated. In making place for the prop deceased was engaged at work that did not belong to him, as all the propping is done under this company by men specially hired for that purpose. The timberman who warned deceased not to

go in was the person to do the propping, but as he didn't consider the place safe he did not go in. He wanted to give the place time to settle. This man lost his life through sheer recklessness.

ACCIDENT No. 128.—Thomas McDonald, Irish, loader, forty-eight years of age, was fatally injured by a rush of coal from a battery at Nesquehoning, on the 10th day of July.

Deceased was engaged as a loader and starter, and while starting a battery was caught by the rushing coal. His right arm was crushed up to the shoulder, and he was injured about the breast. He was sent to the Pennsylvania hospital, Philadelphia, where he died the next day while undergoing an operation.

ACCIDENT No. 140.—Robert Fox, German, miner, thirty-three years of age, was fatally injured by a fall of coal at Upper Lehigh, No. 6, on the 26th day of July.

Deceased was engaged working a breast in very free coal in the B seam. The bottom tier was worked out first, and on account of the very free coal the breast was worked only sixteen feet wide. Deceased had worked the breast up about fifty feet from the gangway, and was engaged at taking down the top coal, which was about seven feet high, when the accident occurred.

In the investigation, I found that a miner named Lewis had been up with deceased a few minutes prior to the accident, and found him barring at a piece of coal that he considered very dangerous. He called the attention of the deceased to the great risk he was taking, who made the usual reply, "it will not fall for a while yet." Lewis had only reached his breast when he heard the noise from the fall, went right back and found that deceased was covered with coal, about thirty tons having fallen.

It is likely that deceased was deceived by a large water crack through the top coal near the face, which, if he understood the danger he was in, he could have detected easily, especially after being warned by Lewis. I do not hesitate to say that he lost his life through carelessness or ignorance, and perhaps both.

ACCIDENT No. 169.—Frederick Munder, German, miner, twenty-seven years of age, was fatally injured at Eckley, No. 5, on the 27th day of August, and died at his home on the 29th.

Deceased and an old miner by the name of James were working together. They had finished their breast, and were taking out the coal. The day of the accident they failed to start the battery, and after several efforts gave it up, thinking to load the loose coal in the chute, then put a dynamite cartridge on one of the lumps, which is the usual way of starting blocked batteries these days, and a safe way compared with the old way of blasting with gunpowder. When the accident happened, deceased and James were on the platform near the gangway breaking a piece of slate, when suddenly a piece of coal about one hundred pounds fell out from the draw-hole and rolled down and struck deceased, knocking him off the

platform to the gangway, which was a fall of about seven feet, from which he was taken up insensible. The doctor found that a splinter of wood had entered the brain. The immediate cause of this accident was the removal of the laggings from the check-battery, for if they were in place, the downward course of this lump of coal would have been stopped.

The mine foreman testified that he was with these men the day previous to the accident, and ordered them to repair the check-battery. Their answer was that the coal that came down was so fine that it would hardly run, and that it did not need the check-battery, which was very true as long as the chute was nearly full of coal, but when the chute was nearly empty, as it was the day of the accident, the check-battery would be a great safeguard.

In investigating this accident, I failed to find any great neglect, therefore do not blame any party in particular, as the place was considered safe, and, indeed, it was a very safe place compared with the majority of places on steep pitches.

Accident No. 202.—August Concinini, Austrian, miner, aged twenty-six years, was fatally injured by a fall of clod in the Wharton seam at Lattimer, No. 3, on the 18th day of October, and died the afternoon of the same day at his home.

Deceased and another Austrian were working this breast together, which was considered a very safe place. It was given to these men on account of its safety, as they were new miners in coal. The mine foreman went through this place twice on the day previous to the accident, and ordered the men to take down the piece of clod that afterwards fell on deceased, as it was not safe for them to work under it. Both times they promised to do it. The last time the mine foreman was there was about five o'clock in the afternoon. He then told them if they didn't take the clod down he would stop their cars The next time he went there was at ten o'clock on the morning of accident, when he found that the bad piece had fallen on deceased, and found his partner trying to lift the clod off him instead of giving the alarm for help. It required three men to lift the piece off him.

By the evidence given by his partner, deceased, this morning, delayed taking the bad piece down, as he had a piece of bottom coal to take up, and wanted the clod to fill in under the road, instead of leaving the coal there. This man lost his life through not knowing the risk he was taking under this treacherous roof, and by also refusing to listen to the command of the man that was supposed to know, who gave him the proper instructions and gave them also in time for him to save his life.

Accident No. 208.—Adam Bachman, German, miner, aged sixty years, was killed on the 25th day of October, at Hazleton, No. 3.

Deceased was engaged at the dangerous work of robbing pillars. He was considered one of the most competent miners under the company, as he had worked for them for about thirty years. The mode of robbing, here, was by opening a narrow chute in the pillar and turning into the old

chambers at stated distances, and through these openings to get the coal down.

These places had been worked some thirty years ago, at a time when coal was not considered as valuable as now, consequently, large pillars were encountered here and there, and some other places were found nearly full of coal that had rolled in from pillars. Deceased happened to get one of the last-named breasts, and had been very successful in getting out a large quantity of coal. While running coal into the chute this day, the pillar, on one side, gave away, and the coal rushed down, entirely covering deceased. He was taken out as speedily as possible, but when found he was dead. He must have been smothered by the fine coal, as there was not a bone broken and not a mark on his body but a few slight scratches. This is one of those accidents connected with coal-mining that no human thought or ingenuity can always guard against.

ACCIDENT No. 231.—James Ashworth, English, miner, aged fifty-four years, was instantly killed by a fall of coal in Oakdale, No. 1, on the 22d day of November.

Deceased and another miner were engaged working a breast in the Mammoth seam, which has very free coal at this point. A week previous to the accident, deceased and partner were ordered by the mine foreman to leave the bottom coal behind, and to open in the Seven-foot, as he considered the benches very unsafe to work under; but by opening in the Seven-foot, which is only about six feet thick at this place, they could take the benches down with ease and safety. When the accident happened, they had undermined the benches about eight feet for nearly half the width of the breast, and were engaged this day in blasting the Seven-foot out on the other side, when suddenly a fall of the lower bench occurred, which killed deceased instantly, and which came nearly killing two other men.

The piece that fell measured twelve feet in length and eight feet in width at the one end, about a foot at the other end, and about twenty inches in thickness. This accident I attribute to the recklessness of deceased and partner, for certainly, if they had taken the care they should, they would not have gone as far under this treacherous bench.

Their heads, when standing, nearly touched it, and it would have been no trouble for them to examine it after every blast to find out its condition. When I examined the place after the accident, I found large pieces of this lower bench ready to drop, and certainly it was not safe to work under.

This accident again makes it self-evident to me that the foreman, or some qualified person, should inspect each working-place once each working day, if possible. I have no doubt, had the mine foreman visited this place the day previous to the accident even, he would have ordered the men to take the bad pieces down, as he had shown good judgment and care in directing the men to open in the Seven-foot.

Fatal Accidents by Cars.

Accident No. 8.—Willie Hancock, American, door-boy, aged fifteen years, was killed by falling under mine cars at No. 3, Nesquehoning, on the 21st day of January.

Deceased was engaged attending a door about fifteen hundred feet from the top of the plane and had been in the habit of riding out with the driver. Several days before the accident occurred, he was notified by the driver-boss that he should stay at his door, and under no circumstances * * * ride out with the driver. The boy obeyed orders for a few days, as he knew that disobedience would cause his discharge. The day of the accident the boy left his dinner at the top of the plane, and rode out on the rear end of the noon trip to get it. When within about seventy-five feet of the branch at the plane, he jumped off and endeavored to run past the last two cars, so he could jump on the brake. While running, he slipped and fell under the cars, with result as stated. Even after riding, if the boy had stayed on the cars he was safe enough, but in attempting to do the work of another he lost his life.

No. 13.—John W. Thomas, Welsh, roadman, aged sixty-four years, was fatally injured by mine cars at Lansford, No. 5, on the 24th day of January, and died the following day.

Deceased was engaged repairing the road near the bottom of the slope, and, while crossing the track, a loaded car, which was running down the grade, struck him and threw him against the empty cars, breaking his leg and crushing the knee-joint. He never recovered from the shock, and died as stated.

No. 50.—August Gross, Italian, company man, aged twenty-one years, was fatally injured by a locomotive at No. 1, Cross Creek, while coming from his work on the morning of March 4, and died at the Drifton hospital in the afternoon of the same day.

Deceased was working on the night shift, and, instead of coming from his work the usual way, endeavored to come out the nearest way, and to accomplish that he had to come through the locomotive road. He had been warned several times by the mine foreman not to come out that way. The morning of the accident a door-boy also told him of his danger, but, regardless of all warnings, he thought he knew best, and, when about one hundred and fifty feet from the mouth of the drift, he was struck by the locomotive and squeezed between the tender-box and a prop. He was horribly mangled, but still alive, and was immediately taken to the hospital, where he died from loss of blood.

No. 52.—Richard Walker, American, driver, aged eighteen years, was fatally injured by mine car at Sugar Loaf on the 8th day of March, and died the following day.

This was indeed a sad accident, as this young man came to his death by sheer carelessness. He was engaged driving in one of the safest gangways

in this district, the road being nearly level, plenty of height and width, as the place was comparatively new.

The footman testified that deceased brought down that morning an old seat made out of a shovel. The footman told him that he should not use that seat, as he had nearly lost his life by falling from it some months previous, and that it was a very unsafe thing. The answer that deceased made was that he would try it once. Deceased took a car into the gangway, and, when it was loaded, fastened the seat on the front end and sat on it, and when about half-way out fell, and when found his head was between the two wheels. He spoke, but not intelligently, and died, as stated, without regaining consciousness.

No. 53.—George Gorelick, Hungarian, loader, twenty-one years of age, was fatally injured by railroad cars near No. 2 breaker, Upper Lehigh, on the 11th day of March, and died the following day at the Drifton hospital.

Deceased was running down two loaded cars, when his brake-iron slipped, and he fell in front of the cars. Before he had time to escape, he was caught by the wheels, receiving injuries on his pelvis and hip-joint, from the effect of which he died, as stated.

No. 159.—Joseph Fitzgo, Hungarian, loader, aged twenty-two years, was fatally injured at South Sugar Loaf breaker on the 20th day of August.

Deceased was engaged loading railroad cars, and somehow in coupling them his hand was caught between the bumpers and mashed terribly. He was sent to St. Luke's Hospital, South Bethlehem, where he died from the effect of said injury on the 30th day of the same month.

No. 174.—Andrew Nametz, Hungarian, laborer, twenty-four years of age, was instantly killed by a runaway car, near the foot of No. 6 slope, Ebervale, on the 10th day of September.

This slope was sunk to get at a piece of crop coal, the water running to the lower workings; therefore, no pump was put in. A few weeks before the accident occurred, a fall of surface took place which closed the waterway, consequently, the water had to be hoisted through No. 6 slope.

Deceased, the day of the accident, was engaged bailing water into a water-car, which was standing in line with the slope, about thirty feet from the bottom. While engaged at this work, the slope was hoisting coal, and, when a car was near the apex, the rope broke inside the cone, and the car dashed down, striking deceased.

Another Hungarian was engaged in bailing water, and, when he heard the noise in the slope, he called to deceased to get out of the way. He also jumped across the track and endeavored to grab him, but failed, and that instant deceased was struck with the car.

Deceased could have escaped if he had ordinary intelligence, or knew anything of the danger from a runaway car on the slope.

By the evidence, I found that a new rope was put in this slope the 16th day of August; therefore, the rope had only been used twenty-one days.

Charles Johnson, the topman, testified that he had examined the rope the day previous to the accident, but found nothing wrong with it. I examined the rope and found it good, but the effect of the acid water had made it brittle inside of the cone, which is the only reason that I could give for a new rope breaking.

I also found out from the men that had been bailing water that the mine foreman had always given instructions for them to keep out of the way when coal was being hoisted.

As there were only about fifty cars of coal a day hoisted, and about fifteen cars of water, there was plenty of time for these men to do their work when the slope was not hoisting coal. A Hungarian, who could speak the English language, testified at the inquest that the mine foreman requested him to give deceased and the other Hungarian the same instructions, and he was confident that deceased and his partner understood him.

After looking carefully through all the evidence, I found that the company and mine foreman had done all they could for the safety of these men; yet the coroner's jury censured the company for hiring such men for such a dangerous place; a verdict, I think, not in accordance with the evidence in the case.

Accident No. 180.—John Marshman, English, a driver's helper, aged seventeen years, was fatally injured by mine cars at the foot of a run at Drifton, No. 1, on the 18th day of September, and died at the Drifton hospital the following day.

Marshman was engaged as a helper, and with three others, was running down a trip of fifteen loaded cars, which was accomplished successfully. The deceased then should have gone about thirty yards further on to the top of another run, and there put sprags in the last car, but instead of that he waited until the trip started, and endeavored to jump on the side of the first car. He slipped and fell under the cars, and was dragged about twenty feet.

In the investigation, I found that the driver-boss, Benton Sheafer, had given the deceased positive instructions a few days prior to the accident, that if he was caught riding on the cars he would be discharged—he having slipped once before, nearly losing his life.

Accident No. 183.—Michael Boshtor, Hungarian, laborer, aged twenty-six years, was instantly killed by a runaway truck at No. 6 slope, Tresckow, caused by the breaking of the rope, on the 20th day of September.

Deceased, with several other men, was engaged in loading rock and timbering near the botton of said slope, which had been idle for some time, and was being repaired. It seems that the foreman of the shift had given instructions to all the men that they should get out of the way when the loaded truck was being hoisted, as he didn't consider it very safe. This day the loaded truck was hoisted, the foreman and the men going as usual into a place of safety until they thought the truck was landed on top. The foreman and deceased returned to their work shortly, when suddenly the

foreman heard a strange noise in the slope, and called out to all hands to look out, and so saying, he jumped into a place of safety.

The Hungarian, in the excitement of the moment, jumped the other way, and was instantly killed by a prop which was knocked out by the descending truck.

In my investigation, I found that the rope was unfit for use, being worn out and rusted through and through.

The outside foreman had been afraid of the rope, and had procured another rope, and kept it on hand for any emergency, but as they had hoisted a pump, weighing about two tons, with the old rope four days previous to the accident, he thought it was good enough to hoist about a ton of rock at the time, therefore he concluded not to change the rope. This foreman should be held criminally neglectful for the death of this man; yet the coroner's jury brought in a verdict of accidental death caused by disobeying instructions.

ACCIDENT No. 212.—James Day, Irishman, oiler, aged sixty-four years, was fatally injured by mine cars at No. 9 breaker, Lansford, on the 6th day of November.

Deceased was engaged oiling cars near said breaker, when somehow his knee was crushed between the bumpers. He was conveyed to his home, where he died the next day from nervous prostration.

ACCIDENTS Nos. 217, 218.—Burton McKeever, locomotive engineer, and Hugh Gallagher, his fireman, aged respectively — years, were fatally injured at No. 5, Lansford, on the 13th day of November. Gallagher died from his injuries the next day, and McKeever on the 17th day of the same month.

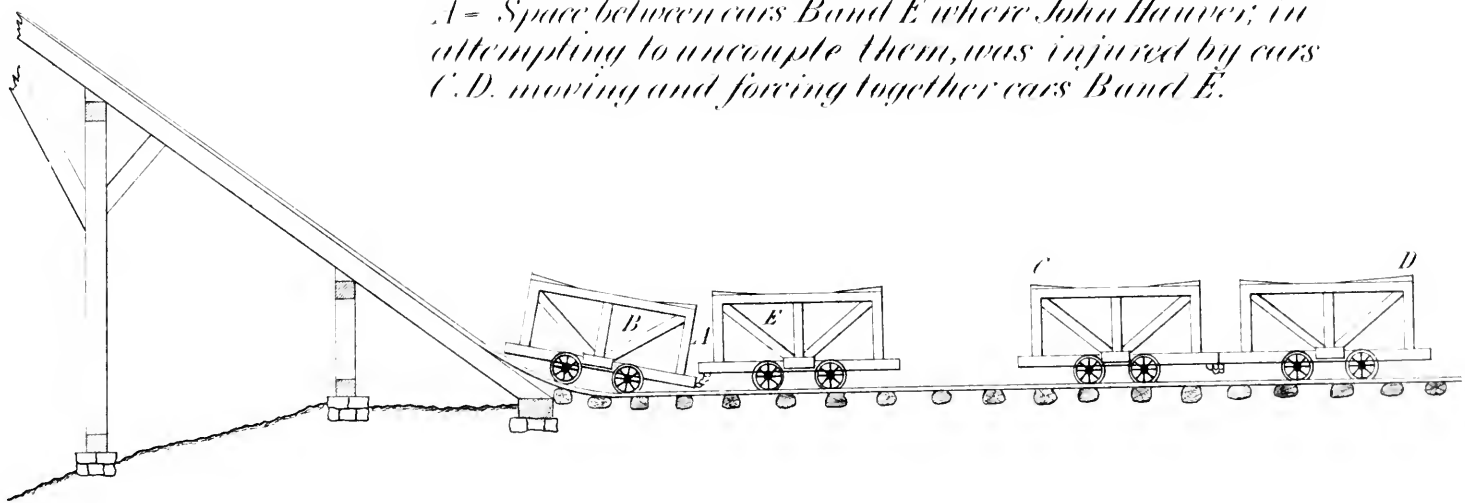
This accident, is, indeed, sad to think about, as the two young men undoubtedly lost their lives through the recklessness of the engineer.

They were engaged hauling coal to breaker from the top of the inside slope, a distance of about one mile through gangway and tunnel. The number of cars they were running in each trip was fifteen, and the total number of cars they had to take out was about two hundred, necessitating thirteen or fourteen trips each day.

Therefore, it can be seen that the work could be done with safety, as they only averaged about three trips every two hours. The engineer also depended on his accuracy in counting the empty cars as they were taken in, and up to this date had been successful in his figures. But this fatal day he gave orders for fourteen cars, and by his own testimony he counted them himself and started in.

The topman testified that he took in fourteen cars to the top of the inside slope. Deceased then started out with his loaded trip of fourteen cars, and when nearing the tunnel his locomotive struck an empty car which he had lost on the road going in, knocking it off the track, driving it ahead, crushing timbers for nearly one hundred feet. In the collision, it seems the safety-valve was broken, and the two men were being scalded alive for that distance, when the cars stopped. Both jumped off the engine, Gal-

Sketch, showing Plane at No 1 Breaker, where John Hauver was fatally injured at Upper Lehigh. November 20th 1884.
A = Space between cars B and E where John Hauver, in attempting to uncouple them, was injured by cars C D. moving and forcing together cars B and E.



lagher making his way out through the *débris*, and McKeever wending his way back to the top of the slope, where he told the terrible story of the collision. Both men were able to walk home, as they were not injured otherwise than by the scalding.

It seems, by the evidence, that some of the miners had made complaint of McKeever's wild running to the contractor, who cautioned him against running so fast, as there was no need of it at any time. He promised to run slower, and did run slower while taking the men in and out, but by the appearance of the wreck, the advice was lost on him while running the coal out. The road and timber were in good condition, but for his two mistakes, the miscounting and fast running, the accident would not have happened.

The jury brought in a verdict of accidental death caused by a collision. The counting of cars has been done away with at No. 6, and a ticket is put on the last car, as they had been doing prior to the accident at the No. 5 colliery, under the same company. About nine days before the accident, Contractor Davis asked McKeever to adopt the ticket system, but he preferred his own system, and was allowed his own way; but the contractor should have insisted on the change, as he knew there was danger attached to McKeever's way, and that the ticket system would be entirely safe.

No. 229.—William Hanver, Hungarian, oiler, aged twenty-one years, was fatally injured by cars near No. 1 breaker, Upper Lehigh, on the 20th day of November, and died at his home the next day.

Deceased was engaged oiling cars near the bottom of the breaker plane, and while uncoupling a car, work which did not belong to him, the cars were bumped down, and his head was caught between the bodies of the cars. If he had pulled his head out, when he heard the cars being bumped, he could have escaped; but, instead of that, he raised his head, and was caught while the first car ascended the pitch, as can be seen by sketch. To uncouple these cars, there is no need for a man to put his head between them. On level road there is plenty of room, as there is a space of at least twenty inches between the bodies of the cars.

No. 234.—Edward Cannon, Irish, laborer, aged seven years, was fatally injured by mine cars at No. 5, Lansford, on the 26th day of November, and died at his home on the 28th day of the same month.

This young man was engaged driving this day, and, while taking out a trip of loaded cars, slipped and fell under the cars, and had his leg and hand badly crushed, from the effects of which he died, as stated.

Fatal Accidents from Blasts.

Accident No. 171.—Patrick Dever, Irish, miner, aged twenty-four years, was killed by a blast in the Red Ash gangway, at No. 9, Lansford, on the 19th day of August.

Deceased was engaged driving a gangway, a very safe and dry one, too. For this reason there was no excuse for any undue haste on his part. He had prepared a blast and had sent the laborers back, then fired the match and ran back himself about fifty feet and hid behind some timbers. By

the testimony of the laborers, he became uneasy, and said that he was afraid that the hole had missed, but one of them told him not to go back for a while as he might be caught. He waited a little while, and went back towards the face, and when within twenty feet the blast exploded, killing him instantly.

The laborers thought that he had waited about two minutes before he started back, but when I tested their ability to compute two minutes both failed—they averaging forty-nine seconds for two minutes. From the evidence of these two men, I came to the conclusion that deceased stayed in his hiding-place less than one minute; therefore it is wrong to blame the squibs for this accident.

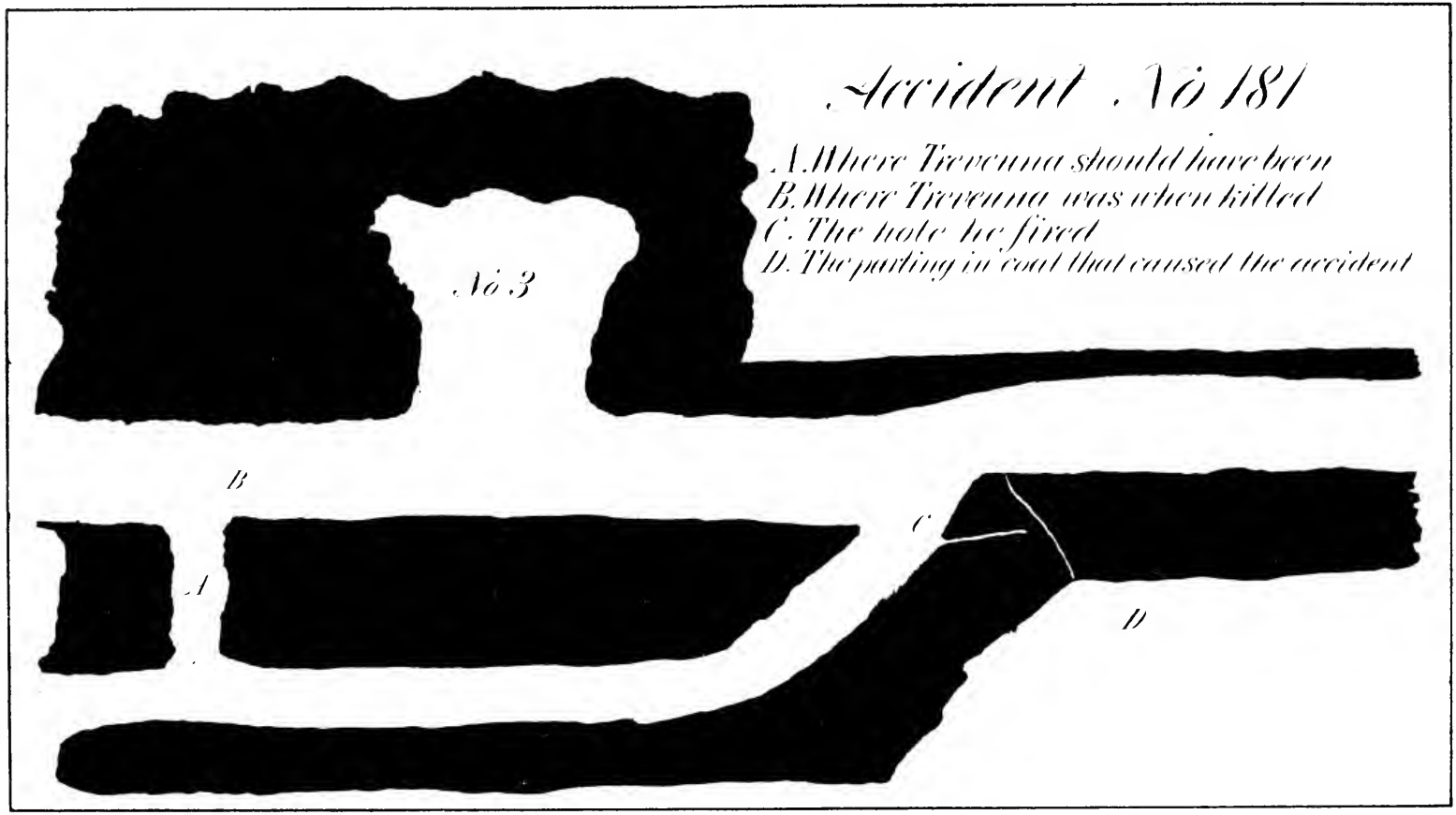
I timed several of the same make of squibs, and found that they vary but a little in their time, taking generally about two minutes to burn if lighted at the extreme end, as they should be.

ACCIDENT No. 181.—Thomas Trevenna, English, miner, thirty-nine years of age, was instantly killed by a piece of coal from a blast, at Coleraine, No. 2, on the 8th day of September.

Deceased was engaged driving a gangway and airway, but the airway was stopped on account of a roll of rock that was encountered when half of the coal was cut out, necessitating conducting the air to the face of the gangway by a brattice. To have enough room for this brattice, deceased had to blast out all the coal to water-level, and had done this work satisfactorily to the foreman all but at one place, which is marked on the sketch by No. 1. The foreman told the deceased to take off a few more shots there, so as to ease the curve, so the air could pass through with less friction. On this fatal day, deceased went back to this objectionable point, and put in a hole that is marked No. 2 on the sketch, and, when ready to fire, applied the match and went back to a place of safety, a distance of one hundred feet from the hole.

By the evidence of John Cole, a laborer, who was the only person on the gangway when deceased came running back calling "fire," after waiting a short time, deceased said he was afraid the hole had missed, as it was very wet, or that the air that was sweeping around the curve had blown out the match. Cole cautioned him not to go back too soon, but deceased could not rest, and started back, and when he had opened the door, which I found to be sixty-six feet from the hole, the blast exploded, and a large piece of coal came back like a cannon ball, which struck deceased in the head, killing him instantly. Witness, on being asked how long deceased had waited before going back, answered by saying that he thought he waited about three minutes. I pulled out my watch and asked him to time three minutes; he looked very wise, and in fifty-nine seconds said that the three minutes were up. In my opinion, a person waiting for a blast to go off is totally unable to compute the time, as one minute often seems to be five minutes to him.

In my investigation, I found that the hole deceased had drilled and fired


Accident . No 181
A. Where Trevenna should have been
B. Where Trevenna was when killed
C. The hole he fired
D. The parting in coal that caused the accident
No 3
B
A
C
D

had not done its work. I measured the hole, from which the blasting barrel had not been taken out, and found it about four and one half feet long, and that it was charged with twenty inches of powder. By looking at the way the hole was drilled, no person would think that it could throw the coal so far back into the gangway, but the reason of this was that a slip was cut at the end of the hole, and the force of the powder came out with that, and forced ahead of it the piece of coal that killed deceased. Deceased was considered a good, practical miner, of long experience, but his judgment failed him this time, or he would not have gone back so soon to see about the blast.

Fatal Accident by an Explosion of Powder.

Accident No. 36.—Charles Oswald, German, miner, thirty-eight years of age, was fatally burned by an explosion of powder on the 25th day of February.

Deceased, while preparing a cartridge, had his lamp in his hat on his head or hung near the powder-box, and while thus preparing his cartridge, a spark from his lamp fell or was blown into the powder keg, which exploded with terrific effect, burning deceased severely on the face, breast, and hands.

The injuries, although very severe, were not considered fatal, yet he died from their effects on the twenty-ninth day after, suffering untold agonies.

These miners that keep their lamps on their heads or near the powder-box seem to me to be devoid of all sense of danger and extremely reckless; but if all the miners that take these unnecessary risks paid the penalty with their lives, as this poor victim did, the list of deaths in coal mines would be largely augmented. I hope that the article on explosives in the new law will be the means of forcing these persons to be more careful of their lives.

Miscellaneous Fatal Accidents.

Accident No. 51.—John M. Jones, Welsh, roadman, aged fifty-five years, was fatally injured by falling part way down the lower lift in the No. 2 slope at Stockton, on the 15th day of March.

Deceased when at his regular work was a roadman, but since the lower lift of this slope had been drowned out, on the 13th day of February, he, with others, was engaged getting the water out. The work of the deceased was to see that the slack-rope at the water car would not get entangled while coal was being hoisted from the upper lift, and another man was stationed at the bell-wire to signal the engineer when requested by deceased, otherwise the engineer, while hoisting coal from the upper lift, would take up the empty water car without a signal.

The day of the accident, deceased was engaged at this work, but it seems to me that he did not keep as careful a watch over the rope as usual, as he called excitedly to the man to signal the engineer to stop, which signal was given as quick as possible. But the engineer had put on all the head of

steam before receiving the signal, therefore could not stop at once, and the empty car, which was off the track, was pulled up the slope a considerable distance, when the bridle chains broke, and the car came dashing back into the battery below. The car did not strike deceased, as he was on the other track, but in the excitement he must have slipped and rolled down the slope a distance of about sixty-five feet into the water. He was immediately taken out of the water, and was found to be seriously injured. He was taken to his home, where he died the following night. If deceased had watched the rope as he should have done, he could have had the car stopped before it had full headway, as he had often done before, as there was about sixty feet of slack-rope to be taken up before the car would start, and by the evidence of the men at work at the place, the engineer always hoisted very slowly until this slack-rope was taken in.

It seems to me that all the slack-rope was taken up this time before deceased's attention was called to it, and the first thing he heard was the noise of the car off the track and under full head of steam. It was shown by the witnesses that the company had taken every precaution to make this place safe, and the jury brought in a verdict of "accidental death."

ACCIDENT No. 194.—Joseph Jglar, Hungarian, miner, aged about thirty-four years, was killed by falling down a manway, at Mt. Pleasant, No. 4, on the 30th day of September.

Deceased and another Hungarian were engaged working a breast in the Wharton seam on the pitch, and were considered good, careful miners. When this accident happened, they were engaged driving a cross-cut into an adjoining breast, which was idle, and as they were about knocking through, deceased said he would go down and get powder ready for the blast, and in the meantime would go up the other manway and listen to his partner drilling, so he could judge how deep the hole should be drilled. He went down his manway and up the other, both manways having a pitch of 75°, and gave a couple raps on the coal. After this the partner heard nothing more from deceased, but thought that he had gone down and would soon come back to him. He waited a long time for his return, as he had thought that deceased had gone to another breast close by to see a friend of theirs. He became tired of waiting, and went down the manway and to the other breast, when he found deceased lying dead at the bottom of the manway.

At the investigation, his partner, Joseph Luketish, testified that deceased was afflicted with heart disease, and that he had fallen once before in their own manway, but that he had given him strict orders that he should not speak of it, as if the mine foreman would hear of it that he would not be allowed to work in a pitching breast.

After hearing all the evidence in the case, I came to the conclusion that deceased had walked up the manway very fast, and while giving the signal to his partner, was struck by heart disease, and fell down the manway a distance of fifteen yards, and that he had either died from heart disease or from the effect of the fall. The fall alone was enough to kill him.

Fatal Accidents by Machinery.

Accident No. 15.—Frank Bierly, German, slate-picker, aged fourteen years, was fatally injured at Eckley, No. 5, on the 29th day of January.

Alfred Bierly, aged sixteen years, a brother of the deceased, was running a small engine, hoisting coal from an inside slope, the rope passing down a drill hole from the surface. The day of the accident the breaker was not working, and the deceased was sent by his father, who is the hoisting engineer at No. 5, with a bucket of coal to his brother, who was running the engine empty when the boy entered the engine house, practicing "starting and stopping" as he called it, according to the instruction given him by the master mechanic. While thus practicing, the fly-wheel burst and pieces flew in all directions, one of which struck the floor of the engine-house close to where deceased stood, and broke the steam-pipe, the escaping steam scalding him fearfully, causing his death in ten hours. Alfred Bierly, the engineer, testified that he was not running "very fast," but could not say "how fast."

By the wreck made by the bursting wheel, it was very evident to my mind that the engine must have been running at a terrific speed, and the sudden check received by the engineer trying to stop was the cause of the wheel's bursting.

This is a very unfortunate affair, as one brother was killed by the recklessness of the other. I think that this boy-engineer was smart, and likely competent enough to hoist coal at this place, but I must say that he was lacking in judgment and entirely too young to have charge of a hoisting-engine. Yet, as it was said, even if he was young, he endangered no lives but his own, unless some one entered as deceased did, as the engine-house was fully a quarter of a mile away from any other building, and no person was, or is, allowed to ride on this inside slope. When the new law comes into effect, no person under the age of twenty-one years will be allowed to run any hoisting-engine.

Accident No. 35.—John Howorth, Hungarian, aged fifteen years, was found dead at the mouth of a screen at the No. 2 breaker at Eckley on the 22d day of February.

Deceased was engaged feeding a pair of rolls, and when or how he was killed can only be conjectured. The day of the accident the mine was not working, but the breaker was running, and a few hands were employed to put the coal that came from the gangways and airways through, consequently the hands did not have steady work. The day being very cold, it seems that the deceased became chilled, and, instead of going to the stove through the regular traveling-way, he, for some reason, crawled over fence-railing and through small holes, and, while thus going, fell into the mouth of the screen, and some time afterward was found dead. No person except the deceased can be blamed or censured for this accident, as the machinery was well-fenced off.

Fatal Accidents at Breakers.

Accident No. 80.—Stephen Butzhorsh, Hungarian, laborer, about thirty

years of age, was instantly killed by falling off No. 1 breaker at Ebervale, on the 21st day of April.

Deceased was engaged on the platform; pulling the coal over the bars. It seems that a lump of coal got fast between the bars, and deceased had made several efforts to loosen it, but had failed. This time he exerted all the strength he had, and gave one strong pull; the piece got loose, and he fell backwards over the railing, landing on the roof, forty feet below. This place had always been considered safe, and was safe enough for any man of ordinary intelligence to work at, it having been used for twenty-five years without an accident. Deceased had only worked a few days, he having just recovered from the effect of a previous accident.

ACCIDENT No. 98.—John Jumble, Hungarian, laborer, aged about thirty years, was fatally injured at Deringer breaker, on the 11th day of May, and died the following day at the Drifton hospital.

Deceased, with other Hungarians, was engaged in carrying plates for the lump coal chute. To do this they had to go down several steps to a platform. Deceased had carried a number of plates, and had ascended these steps with the other men, but this time, to shorten the distance, he took a jump of about five feet, and his weight, with that of the plate on his back, on landing, broke one of the planks of the platform, and he fell through a distance of twenty-three feet. The plank he landed on was yellow pine, and two inches thick, and would have been able to resist the strain if it did not have two knots in the middle, which had not been detected.

This man had no right to make any such jump, and I consider that he lost his life through carelessness and ignorance.

Fatal Accidents at Strippings.

ACCIDENT No. 201.—John Androsky, Hungarian, laborer, aged twenty-one years, was fatally injured by a fall of clay at the Ebervale strippings, on the 15th day of October, and died at the Drifton hospital on the 17th.

Deceased was undermining a bank of clay and was warned several times this day to be careful and take care of himself, as the bank was very treacherous, and liable to fall any minute. To make it more safe for this man to work, the foreman had detailed another Hungarian to watch while he was working, thinking to make it doubly sure that the man would not be injured.

While deceased was picking away, the bank fell on him, causing his death as above stated. The man watching must have neglected his duty, but his testimony was that deceased did not jump back when he called to him.

ACCIDENT No. 220.—John Andreko, Hungarian, laborer, was fatally injured at the Coleraine strippings on the 15th day of November, and died at his boarding-house the same evening.

Deceased was engaged as a picker by Weaver & Dick, and had been in their employ at the same work for over two years. He was considered a very intelligent Hungarian. While at his usual work this day, a small

piece of stone, weighing about six pounds, loosened from the side of the bank, and fell a distance of about eight feet, and struck him on the side of the head, knocking him down senseless; but he soon came to himself, and asked for a drink of water, and took hold of his pick with the intention of keeping on at work, but was ordered to go home by the foreman, who also sent a man with him. He was not considered even severely injured, but he died the afternoon of the same day. There is something peculiar in this race of people, as what would be considered a slight injury to other nationalities proves fatal to them.

Accident No. 232.—John Oncicki, Hungarian, laborer, twenty-two years of age, was instantly killed at the Yorktown strippings on the 24th day of November.

Deceased was also employed as a picker by Weaver & Dick, and had been at the same work for them for over a year. This fatal day he was undermining a bank; the frost being in the ground, it did not fall as readily as usual.

The foreman, a very intelligent Hungarian, had given deceased orders to go to the top of the bank and bear it down, as he did not consider it safe to undermine the bank any further. The foreman's attention was then called away to some other matters, and while thus engaged, in a few minutes afterwards, was told that the bank had fallen on deceased. Instead of obeying instructions, and going on top, deceased thought he would save himself that trouble by undermining a little more. While doing so, without any warning, the bank fell, and, while in the act of jumping back, deceased's foot slipped, and he fell on his back. Before he recovered himself, a piece of frozen ground struck him on the head, crushing it into a jelly. He was not injured on any other part of the body, and the head was the only part that was touched by the fallen bank.

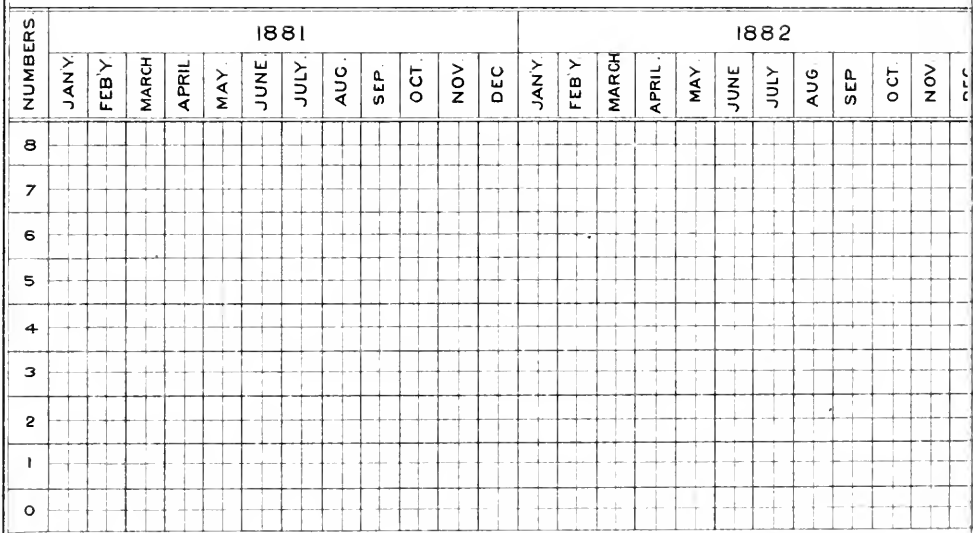
TABLE No. 5.—*A list of accidents resulting in death in the South District of Lu- for the year end-*

DATE	No. of accidents.	Names of Persons Killed.	Occupation.	Age.	Widows.	Orphans.	Names of Collieries.
Jan. 21	1	Willie Hancock,	Door-boy,	15			Nesquehoning,
25	2	John W. Thomas,	Roadman,	65	1		Lansford, No. 5,
29	3	Frank Bierly,	Slate-picker,	15			Eckley, No. 5,
Feb. 22	4	John Howorth,	Slate-picker,	15			Eckley, No. 2,
25	5	Charles Oswald,	Miner,	38	1		Cranberry Mine,
Mar. 4	6	August Grouse,	Co. laborer,	21			Drifton, No. 1,
5	7	John M. Jones,	Miner,	54	1	2	Stockton, No. 2,
8	8	Richard Walker,	Driver,	18			Sugar Loaf,
11	9	George Goerlick,	Loader,	20			Upper Lehigh, No. 2,
Apr. 10	10	Michael Bruchick,	Laborer,	43	1		Humboldt,
21	11	Stephen Butzkorsh,	Laborer,	35	1	4	Ebervale,
25	12	Henry Marshman,	Miner,	40	1	4	Drifton, No. 2,
May 7	13	John Hanlon,	Laborer,	25			Treskow, No. 7,
12	14	John Jumble,	Laborer,	30	1	3	Derringer,
June 16	15	Michael Maddle,	Miner,	27			Derringer,
July 10	16	Thomas McDonald,	Laborer,	48			Nesquehoning,
26	17	Robert Fox,	Miner,	33	1	4	Upper Lehigh, No. 6,
Aug. 20	18	Joseph Fetzgo,	Laborer,	27			South Sugar Loaf,
28	19	Frank Munder,	Miner,	28			Eckley, No. 5,
Sept. 8	20	Thomas Trevenna,	Miner,				Coleraine, No. 2,
10	21	Andrew Hamets,	Laborer,	22			Ebervale,
18	22	John Marshman,	Helper,	17			Drifton, No. 1,
19	23	Patrick Dever,	Miner,	24			Lansford, No. 9,
20	24	Michael Barshton,	Laborer,	30			Trescow, No. 6,
30	25	Joseph Iglar,	Miner,	34	1	4	Mount Pleasant,
Oct. 15	26		Laborer,	20			Ebervale,
18	27	August Coneine,	Miner,	26			Lattimer, No. 3,
25	28	Adam Bachman,	Miner,	60	1		Hazleton, No. 3,
Nov. 6	29	James Day,	Oiler,				Lansford, No. 9,
13	30	Burton McKeever,	Engineer,				Lansford, No. 6,
13	31	Hugh Gallagher,	Fireman,				Lansford, No. 6,
15	32	John Andreko,	Laborer,	21			Coleraine,
20	33	John Halmer,	Laborer,	22			Upper Lehigh, No. 1,
22	34	James Ashworth,	Miner,	56	1		Oakdale, No. 1,
21	35	John Onclck,	Laborer,	24			Yorktown, No. 6,
26	36	Edward Cannon,	Helper,				Lansford, No. 5
Dec. 2	37	Andrew Miller,	Timberman,				Lansford, No. 6,
3	38	Robert Mills,	Pump-runner,	23			East Crystal Ridge,
11	39	John Boner,	Helper,	16			Drifton, No. 1,
18	40	Thomas Shultz,	Driver,				Lansford, No. 5,
		Total,			11	21	

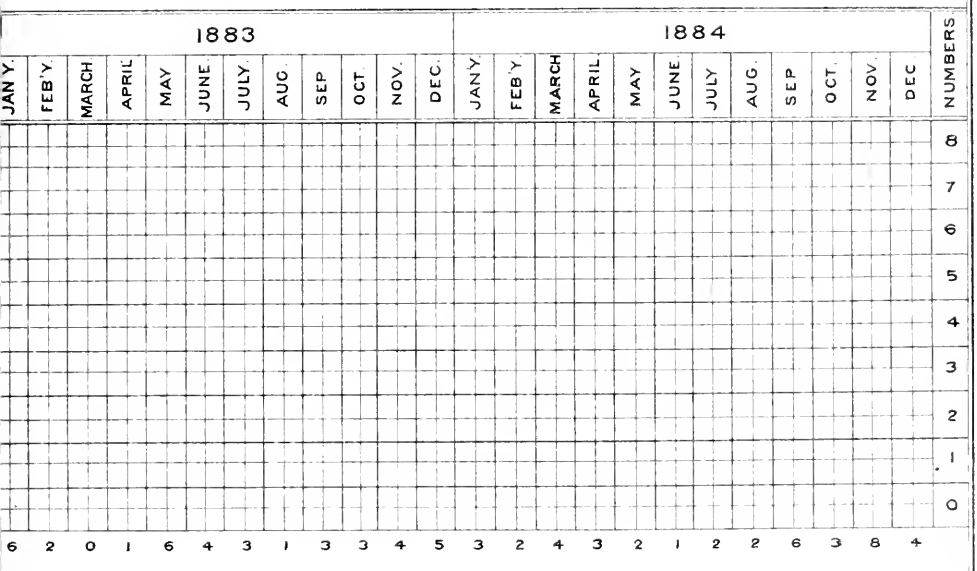
Table of Comparison.

	1881.	1882.	1883.	1884.
Number killed,	25	19	18	16
Number fatally injured,	22	21	20	24
Total,	47	40	38	40

DIAGRAM SHOWING THE
EACH MONTH, THE



NUMBER OF ACCIDENTS
LAST FOUR YEARS.



zerne and Carbon counties, Pennsylvania, with remarks on the cause of each, ing December 31, 1884.

Remarks on the Causes of Accidents.	Explosion of CH4 gas.	Falls of roof and coal.	By mine cars.	Explosion of blasts and powder.	Miscellaneous inside.	Machinery on surface.	Miscellaneous outside.	Total.	No. of accidents.
Fell under mine cars, and was instantly killed			1					1	1
Fatally injured; fell under mine car, and died next day,			1					1	2
Fatally injured by the bursting of a fly-wheel; died the following day,						1		1	3
Found dead at the mouth of a screen; deceased had wandered into a dangerous place,						1		1	4
Fatally injured by an explosion of a keg of powder, caused by a spark from his lamp; died on the 29th after great suffering,				1				1	5
Fatally injured; struck by a locomotive while coming from work,			1					1	6
Fatally injured by falling down slope; died the following day,					1			1	7
Fatally injured; fell under a mine car, and died while being taken home,			1					1	8
Fatally injured; fell under railroad car at breaker, and died the following day,			1					1	9
Fatally injured by a fall of clod; died on the 12th of same month,		1						1	10
Instantly killed by falling off the breaker, a distance of forty feet,							1	1	11
Instantly killed by a fall of coal in breast,		1						1	12
Instantly killed by a fall of clod on the gangway, while taking it down,		1						1	13
Killed by falling into a chute in breaker,							1	1	14
Instantly killed by a fall of rock in his breast,		1						1	15
Fatally injured by a rush of coal at battery; died the next day at the hospital while undergoing operation,		1						1	16
Fatally injured by a fall of coal; died at his home the third day,		1						1	17
Hand crushed between railroad cars at breaker; died at the Pennsylvania hospital while under operation,			1					1	18
Fatally injured by a piece of coal from battery; died next day,		1						1	19
Instantly killed by a piece of coal from a premature blast,				1				1	20
Killed by a runaway car near the bottom of the slope,			1					1	21
Fatally injured by mine cars at bottom of run,			1					1	22
Instantly killed by a premature blast,				1				1	23
Instantly killed by a runaway car on slope,			1					1	24
Instantly killed by falling down manway,					1			1	25
Fatally injured by a fall of clay at stripping; died on the 17th, at Drifton hospital,							1	1	26
Fatally injured by a fall of clod; died the same day,		1						1	27
Smothered by a rush of fine coal, while robbing pillars,		1						1	28
Fatally injured by mine cars; died next day,			1					1	29
These men were fatally scalded in a collision; Gallagher died the next day, and McKeever on the 17th,			1					1	30
			1					1	31
Fatally injured by a fall at the stripping; died the same day,							1	1	32
Fatally injured by mine cars; died the following day,			1					1	33
Instantly killed by a fall of coal,		1						1	34
Killed by a fall of clay at stripping,							1	1	35
Fatally injured by mine cars; died on the 29th of same month,			1					1	36
Fatally injured; fell under a timber truck; died the next day,			1					1	37
Fell down slope, and was instantly killed,					1			1	38
Fatally injured by mine cars; died next day at the hospital,			1					1	39
Fatally injured by a mine car; died at his home on the 22d,			1					1	40
Total,		10	17	3	3	2	5		

Nationality by Birth of Persons Fatally Injured during the Year 1884.

Hungarians,	13
Irish,	7
Germans,	7
English,	4
Americans,	3
Welsh,	2
Italians,	2
Austrians,	2
Total,	40

TABLE No. 6.—*A list of non-fatal accidents in the South District of Luzerne and ing December*

DATE.	No. of accident.	Names of Persons Injured.	Occupation.	Age.	Name of Collieries.
Jan. 2	1	William Gallagher,	Helper,	14	Upper Lehigh, No. 4,
3	2	John Stack,	Carpenter,	45	Laurel Hill,
4	3	John McGraw,	Miner,	35	Mt. Pleasant,
9	4	John McCarthy,	Driver,	19	Drifton, No. 2.
11	5	Michael Lautaucher,	Laborer,	33	Hazleton, No. 6,
14	6	Edward Charlton,	Miner,	29	Tomhicken.
16	7	David Isaac,	Miner,	38	Jeansville, No. 7,
22	8	David Jenkins,	Slate-picker,	14	Lansford, No. 4, breaker,
23	9	Anthony Dale,	Miner,	30	Sugar Loaf,
23	10	Harrison Leffler,	Driver,	23	Harleigh,
25	11	John G. Walters,	Helper,	15	Drifton, No. 2,
29	12	William Jones,	Miner,	38	Jeansville, No. 4,
Feb. 2	13	August Breiding,	Miner,	35	Hazleton, No. 8,
3	14	Henry Jones,	Fan-boy,	15	Laurel Hill,
4	15	Thomas Dennis,	Miner,	40	Hazleton, No. 6,
4	16	Anthony Moyer,	Driver,	16	Laurel Hill,
6	17	Peter Henry,	Laborer,	24	Sugar Loaf,
6	18	Thomas Bevan,	Miner,	26	Jeansville, No. 1,
6	19	Edward Watts,	Driver,	18	Jeansville, No. 4,
7	20	John Daly,	Driver,	19	Jeansville, No. 1,
7	21	Jonathan Roberts,	Driver,	17	Jeansville, No. 1,
9	22	Lawson Farringer,	Miner,	27	Drifton, No. 3,
11	23	August Seifert,	Laborer,	35	Eckley, No. 2,
11	24	Martin Fahey,	Loader,	17	Nesquehoning,
11	25	William Horn,	Slate-picker,	15	Gowen,
13	26	Joseph Hartranft,	Laborer,	22	Lansford, No. 9,
14	27	John Rhimmack,	Miner,	28	Harleigh,
18	28	Phillip Smith,	Miner,	55	Hazleton, No. 6,
20	29	James Brennan,	Miner,	40	East Crystal Ridge,
20	30	Michael Gallagher,	Miner,	20	Drifton, No. 2,
26	31	John M. Scott,	Blacksmith,	28	Nesquehoning,
26	32	Thomas Morgan,	Driver,	19	Drifton, No. 2,
26	33	George Bird,	Driver,	16	Drifton, No. 1,
26	34	Michael Frinco,	Laborer,	26	Drifton, No. 2,
27	35	Michael Shupock,	Laborer,	35	Yorktown stripping,
29	36	John Trala,	Laborer,	40	Ebervale,
29	37	George Hertzog,	Miner,	32	Derringer,
March 3	38	Andrew Mickler,	Laborer,	26	Lansford, No. 9,
3	39	William Schramm,	Miner,	40	Laurel Hill,
4	40	Lincoln Davies,	Locomotive eng'r,	35	Lansford, No. 9,
4	41	Hugh Smith,	Miner,	48	Hazleton Mine,
4	42	Michael Siusco,	Hitcher,	23	Drifton, No. 1,
14	43	Patrick O'Donnel,	Miner,	40	Lansford, No. 9,
19	44	Dennis Gallagher,	Miner,	38	Lansford, No. 6,
20	45	Peter Padden,	Laborer,	34	Milnesville,
24	46	Joseph Williams,	Miner,	35	Harleigh,
25	47	Samuel Williams,	Oiler,	14	Harleigh,
27	48	Thomas Hawke,	Driver,	15	Laurel Hill,
27	49	Charles Roth,	Company man,	30	Cranberry,
29	50	Charles Husler,	Company man,	23	Hazleton, No. 3,
April 2	51	Dominick Cull,	Miner,	50	Jeansville, No. 4,
2	52	John McHugh,	Hitcher,	16	Oak Dale, No. 1,

Carbon counties, Pennsylvania, with remarks on the cause of each, for the year end-31, 1884.

Remarks on the Extent and Cause of Accidents.	Explosion of CH4 gas.	Falls of roof and coal.	By mine cars.	Explosions of blasts and powder.	Miscellaneous inside.	Miscellaneous outside.	Totals.	No. of accident.
Was caught between bumpers while coupling cars, and severely injured,			1				1	1
While repairing breaker he fell from a platform and was seriously injured,						1	1	2
Seriously injured by a fall of coal while in the act of securing it,		1					1	3
Leg fractured; he fell and was run over by a mine car,			1				1	4
Arm cut off by a fall of frozen ground at No. 6 stripping,						1	1	5
Severely injured on head, chest, and thigh by a fall of dividing slate,		1					1	6
Fell backward from a platform seven feet high, and was severely injured on head,					1		1	7
Arm fractured by falling in breaker while playing,						1	1	8
Severely burned by an explosion of gas through the neglect of the fire boss,	1						1	9
Foot fractured; was caught between car and pillar, car having jumped the track,			1				1	10
Fore finger of right hand crushed; was caught between stretcher and car; which caused amputation,			1				1	11
Seriously injured by being caught between car and gate at top of the slope,			1				1	12
Was struck on head with a prop, and severely injured,					1		1	13
Had three of his fingers crushed by being caught in the cogs of the fan he was turning,					1		1	14
Hand badly cut; was struck by a piece of coal he was barring down,		1					1	15
Was kicked on the arm by a mule, and severely cut,					1		1	16
Had his big toe cut off by being run over by a mine car,			1				1	17
Leg fractured and severely bruised about body by a fall of coal,		1					1	18
Was caught between the top of a car and the roof, and was seriously injured,			1				1	19
Was caught between mules and empty cars, and had his shoulder dislocated,			1				1	20
Slipped while attempting to jump on a moving car, and was severely bruised about legs,			1				1	21
Fell while carrying a prop, and had his arm fractured,					1		1	22
Leg fractured; was caught by a car on a plane outside near breaker,			1				1	23
Ankle dislocated by being caught between cars at breaker,			1				1	24
Leg fractured and back bruised; was caught by screen while playing,						1	1	25
Leg fractured; was caught between guard-rails and fell under car,			1				1	26
Fell on gangway while carrying a rail; fractured his leg,					1		1	27
Ribs fractured by a fall of coal by being too reckless,		1					1	28
Burned by an explosion of powder, caused by a spark from his lamp,				1			1	29
Severely burned by an explosion of gas through the carelessness of himself and partner,	1						1	30
A piece of iron fell on his foot, fracturing one of his toes,					1		1	31
Slipped and fell under mine cars, and was severely injured,			1				1	32
Was kicked by a mule, and severely injured,					1		1	33
Seriously injured by being squeezed between mine cars,			1				1	34
Was struck by a fall of clay and sustained a fracture of the back; was sent to Pennsylvania Hospital, at Philadelphia,						1	1	35
Seriously injured by a fall of coal, and sent to the Drifton hospital,		1					1	36
Sustained a compound fracture of the leg by a fall of slate, and sent to the Drifton hospital,		1					1	37
Was severely squeezed by a rush of coal from battery,		1					1	38
Severely cut on arm by a piece of coal he was trying to bar down,		1					1	39
Severely bruised about legs and body by running into a lumber truck,			1				1	40
Hands and face badly burned by an explosion of gas,	1						1	41
Seriously injured; was struck by a runaway car on plane, and was taken to the Drifton hospital,			1				1	42
Cut on head and bruised on back by a fall of coal,		1					1	43
Was caught by a rush of coal from battery, and badly injured,		1					1	44
Foot fractured by falling at breaker,						1	1	45
Leg fractured by being struck by a piece of coal,		1					1	46
Leg fractured and hip dislocated by falling under mine car,			1				1	47
Fingers fractured; caught under car wheels,			1				1	48
Head and legs severely injured by the upsetting of a lumber truck,			1				1	49
Compound fracture of jaw-bone, also a fracture of the collar-bone by being caught between car and timber,			1				1	50
Severely bruised about body by a fall of coal,		1					1	51
Seriously injured by a runaway car from a plane,			1				1	52

TABLE No. 6—

DATE.	No. of accident.	Names of Persons Injured.	Occupation.	Age.	Name of Collieries.
April 3	53	James Forrest,	Miner,	45	Cranberry,
7	54	John Fry,	Stable boss,	65	Coleraine,
7	55	William York,	Miner,		Lansford, No. 5,
8	56	John Burns,	Laborer,	27	Hazleton Mine,
8	57	John Kozley,	Oiler,	22	Upper Lehigh, No. 6,
9	58	George Condick,	Outside laborer,	30	Ebervale,
9	59	Steven Butzbach,	Outside laborer,	40	Ebervale,
11	60	Thomas M. Williams,	Miner,	50	Drifton, No. 1,
11	61	Henry Fisher,	Company man,		Cranberry,
11	62	Joseph Hall,	Miner,		Yorktown, No. 6,
11	63	Michael McAffee,	Driver,	16	Hazleton, No. 3,
17	64	William Tonkin,	Miner,	45	Nesquehoning,
17	65	John Watkins,	Miner,	32	Gowen,
18	66	Hugh Sheridan,	Miner,	40	Jeansville, No. 1,
22	67	Dominic Sharkey,	Laborer,	22	Upper Lehigh, No. 2,
24	68	Edward Sweeny,	Door-boy,	13	Harleigh,
24	69	Henry Polgrane,	Miner,	45	Stockton, West, No. 1,
25	70	Frank Horn,	Miner,	36	Nesquehoning,
25	71	Samuel Leslie,	Miner,	26	Nesquehoning,
26	72	John Mooney,	Miner,	31	Highland, No. 1,
26	73	Michael Orowitz,	Outside laborer,	25	Hazleton Mine,
26	74	William Newton,	Brakeman,	20	Nesquehoning,
29	75	Patrick Sweeny,	Miner,	30	Lansford, No. 5,
30	76	George Barner,	Laborer,	35	Upper Lehigh, No. 4,
30	77	Christian Wiegand,	Pump-runner,	58	Jeansville, No. 4,
May 1	78	Charles Schafer,	Company laborer,	22	Lattimer, No. 2,
5	79	William Costello,	Door-boy,	14	Lattimer, No. 2,
7	80	James Donohue,	Miner,	40	Hazleton Mine,
12	81	Rees Phillips,	Door-boy,	16	Gowen,
12	82	Michael Monahan,	Miner,	45	Lattimer, No. 2,
13	83	James McGeehan,	Driver,	27	Eckley, No. 5,
14	84	Rowland Edwards,	Miner,	50	Treseckow, No. 9,
16	85	John Gosper,	Laborer,	30	Milnesville,
17	86	James Cambell,	Driver,	14	Harleigh,
22	87	John Fury,	Laborer,	24	Drifton, No. 2,
23	88	John Monahan,	Miner,	29	Jeansville, No. 4,
24	89	James Mulherrin,	Miner,	30	Stockton, West, No. 1,
28	90	Luke McGrath,	Driver,	22	Jeansville,
28	91	Lawrence Ratcliffe,	Timberman,	50	Lansford, No. 5,
28	92	John Conley,	Slate-picker,	14	Nesquehoning,
31	93	Edward Mehan,	Driver,	16	Nesquehoning,
June 4	94	John Shanto,	Outside laborer,	22	Ebervale,
4	95	Dennis McCoy,	Driver,	17	Hazleton Mine,
12	96	Charles Quinn,	Driver,	18	Ebervale,
13	97	Thomas M. Thomas,	Laborer,	25	Lansford, No. 9,
14	98	John Bresko,	Laborer,	30	Hazleton Mine,
14	99	Thomas McGroaty,	Driver,	18	Mt. Pleasant,
16	100	Charles Witchey,	Driver,	21	Derringer,
18	101	Dennis Gallagher,	Driver,	20	Ebervale,
25	102	Andrew Michler,	Laborer,	30	Lansford, No. 9,
26	103	James Fleming,	Miner,	26	Humboldt,
26	104	Joseph Baraka,	Laborer,	22	Stockton, No. 2,
July 1	105	John R. Crossen,	Fire boss,	42	Nesquehoning,
1	106	Thomas Rossie,	Laborer,	34	Gowen,
3	107	Marcus Gallagher,	Door-boy,	14	Treseckow,
7	108	Daniel Harris,	Laborer,	24	Beaver Meadow,
8	109	John O'Donnel,	Runner,	21	Yorktown, No. 6,
10	110	Thomas McDonald,	Laborer,	18	Cranberry,
10	111	George Conner,	Miner,		Sugar Loaf,
11	112	Joseph Wargam,	Laborer,	33	Laurel Hill,
14	113	Pat. H. Conahan,	Miner,	40	Beaver Meadow,
15	114	Charles Fox,	Engineer,		Laurel Hill,
18	115	John Schaefer,	Miner,		Cranberry,
21	116	Nelson Corryell,	Miner,		Sugar Loaf,

Continued.

Remarks on the Extent and Cause of Accidents.	Explosion of CH4 gas.	Falls of roof and coal.	By mine cars.	Explosion of blasts and powder.	Miscellaneous inside.	Miscellaneous outside.	Totals.	No. of accident.
Foot badly mashed by a prop falling on it,					1		1	53
Seriously injured by falling in breaker,						1	1	54
Back and shoulder badly spralned, caused by the falling of a collar while putting it in place,					1		1	55
An artery severed at the wrist by being struck by a small piece of coal,		1					1	56
Foot fractured by being caught between the bumpers of mine cars,			1				1	57
Leg fractured by a stone rolling on it at stripping,						1	1	58
Severely injured by falling under a large coil of wire rope,						1	1	59
Arm fractured by a fall of coal,		1					1	60
Severely injured by a collision of mine cars,			1				1	61
Severely burned on hands and face by a premature blast,				1			1	62
Hand severely lacerated; caught between car and timber,			1				1	63
Slightly burned by an explosion of gas,	1						1	64
Burned on hands and face by an explosion of gas,	1						1	65
Seriously injured by a fall of coal,		1					1	66
Seriously injured; was caught between a car and pillar,			1				1	67
Severely injured; was struck by a mine car while opening his door,			1				1	68
Leg fractured; caused by a battery prop falling on it,					1		1	69
These two men were slightly burned by an explosion of gas through their own carelessness in not obeying orders,	1						1	70
	1						1	71
Seriously injured by a fall of dividing slate,		1					1	72
Severely injured by being struck by a mine car at breaker,			1				1	73
Leg fractured by falling under mine car,			1				1	74
Ribs fractured by falling under bucket in shaft,					1		1	75
Severely injured on head by a fall of coal,		1					1	76
Thigh fractured by being struck by a roller on the slope,					1		1	77
Was struck by a piece of coal that rolled down slope, and sustained the fracture of his foot,		1					1	78
Fell from a car while being hoisted up the slope and sustained severe injuries,			1				1	79
Severely injured by a fall of coal in his breast,		1					1	80
Fore finger cut off by falling with hand under car wheel,			1				1	81
Leg fractured by a piece of slate that fell through battery,		1					1	82
Leg fractured and otherwise severely injured by mine cars,			1				1	83
Severely injured about head and shoulders by a fall of coal,		1					1	84
Struck by a small piece of coal from a blast and severely injured,		1					1	85
Foot crushed by the wheels of a mine car,			1				1	86
Had one of his toes cut off by an ax glancing while making a wedge,						1	1	87
Arm severely injured; was caught between the car and roof,			1				1	88
Seriously injured; fell down slope, a distance of three hundred feet; the angle of slope is 60°,					1		1	89
Arm fractured by mine cars,			1				1	90
Had two of his ribs fractured; fell while unloading a truck of timber,			1				1	91
Leg fractured; fell while playing in breaker,						1	1	92
Severely injured by being kicked by a mule,					1		1	93
Thigh fractured by a fall of clay at stripping,						1	1	94
Seriously injured by mine cars at breaker,			1				1	95
Thigh fractured by a fall of coal,		1					1	96
Back badly injured by a rush of slate into chute,		1					1	97
Face cut by being struck by a small piece of coal flying from a shot,		1					1	98
Arm fractured; was caught between car and pillar, car jumping the track,			1				1	99
Shoulder-blade and arm fractured by mine cars near breaker,			1				1	100
Severely injured by mine cars,			1				1	101
Badly crushed by a fall of coal,		1					1	102
Seriously injured by a fall of coal,		1					1	103
Thigh fractured and otherwise injured about body by cars near breaker,			1				1	104
Slightly burned by an explosion of gas through his own carelessness,	1						1	105
Was burned by an explosion of gas by not obeying instructions,	1						1	106
Fell under mine cars and was severely injured,			1				1	107
Toes crushed by rails falling on them,						1	1	108
Ankles fractured, caused by falling under mine cars,			1				1	109
Severely injured; was struck by a piece of coal from a blast,				1			1	110
Was struck by a piece of coal rolling down breast, and badly injured,		1					1	111
Leg fractured by a piece of coal sliding against it,		1					1	112
Arm fractured and otherwise injured by a fall of coal,		1					1	113
Seriously injured by falling down slope from the bridge,					1		1	114
Ribs fractured by flying coal from a premature blast,				1			1	115
Hands and face badly burned by an explosion of powder caused by a spark from a lamp,							1	116

TABLE No. 6—

DATE.	No. of accident.	Names of Persons Injured.	Occupation.	Age.	Name of Collieries.
July 22	117	James Brislin,	Laborer,	22	Laurel Hill,
22	118	Samuel Leslie,	Miner,	25	Nesquehoning,
23	119	A. G. Beorige,	Miner,	52	Harleigh,
25	120	Michael Kendrick,	Laborer,	.	Lansford, No. 6,
29	121	Frank Schlosser,	Driver,	16	Hollywood,
29	122	John Chiston,	Laborer,	25	Hollywood stripping,
30	123	Christian Schulbrumpf,	Company laborer,	50	Sugar Loaf,
31	124	Patrick Conehan,	Company laborer,	49	Lansford, No. 9,
31	125	Thomas Dennis,	Miner,	45	Hazleton, No. 6,
Aug. 1	126	Nathan Houser,	Slate-picker,	12	Lansford, No. 4,
1	127	John J. Boyle,	Loader,	.	Lansford, No. 5,
1	128	Michael O'Donnell,	Laborer,	50	Upper Lehigh, No. 4,
4	129	Patrick Keating,	Laborer,	21	Harleigh,
5	130	William Welsh,	Laborer,	27	Ebervale,
5	131	Christian Minich,	Miner,	45	Eckley, No. 5,
8	132	Francis Carrol,	Slate-picker,	14	Lansford, No. 5,
9	133	Thomas Carr,	Miner,	54	Milnesville,
9	134	James O'Donnel,	Miner,	27	Drifton, No. 2,
14	135	William Mulherrin,	Laborer,	21	Pond Creek,
18	136	John Sulettle,	Laborer,	28	Stockton, No. 2,
22	137	Barney Mooney,	Miner,	29	Eckley, No. 5,
22	138	August Murshoff,	Pump-runner,	19	Sugar Loaf,
22	139	John Myers,	Pump-runner,	18	Sugar Loaf,
22	140	George Shugart,	Company laborer,	26	Hazleton, No. 3,
26	141	Andrew Jugging,	Laborer,	30	Hollywood,
27	142	Andrew Pastey,	Miner,	37	Eckley, No. 5,
27	143	Frank Durkin,	Top-boy,	14	Yorktown, No. 6,
27	144	Condy Boyle,	Miner,	60	Yorktown, No. 6,
30	145	Pat. McCadden,	Miner,	50	Oakdale, No. 2,
Sept. 8	146	Harrison Letller,	Driver,	24	Harleigh,
9	147	Peter McGuire,	Slate-picker,	13	Sugar Loaf,
11	148	Edward McCaull,	Laborer,	.	Lansford, No. 5,
11	149	John Mulherrin,	Laborer,	.	Lansford, No. 5,
11	150	Charles Sharp,	Laborer,	.	Lansford, No. 5,
16	151	John Thurley,	Miner,	.	Sugar Loaf,
16	152	John Hunter,	Laborer,	30	Lattimer, No. 1,
20	153	Dennis McHugh,	Laborer,	24	Yorktown, No. 6,
20	154	Thomas Flewellyn,	Miner,	27	Highland, No. 1,
20	155	Daniel Rees,	Miner,	26	Tomhicken,
23	156	William Davis,	Door-boy,	13	Jeansville, No. 7,
23	157	John Devaney,	Miner,	.	Lattimer, No. 2,
23	158	Niel O'Donnell,	Miner,	.	Beaver Brook,
23	159	William Harry,	Driver,	.	Stockton, No. 2,
24	160	Charles Gebaur,	Company man,	40	Sugar Loaf,
27	161	Milton Sigfeld,	Laborer,	30	Treskow,
28	162	George Gullock,	Laborer,	27	Ebervale,
Oct. 7	163	Michael Washisko,	Laborer,	.	Laurel Hill,
8	164	Phillip Smith,	Miner,	.	West No. 1, Stockton,
8	165	Christian Schade,	Miner,	.	West No. 1, Stockton,
9	166	Edward Kinderline,	Miner,	35	Beaver Brook,
9	167	Charles Bonner,	Laborer,	23	Beaver Brook,
14	168	Casper Haghgand,	Miner,	50	Hazleton Mine,
18	169	Thomas Rowe,	Miner,	52	Laurel Hill,
21	170	Thomas Elliot,	Miner,	27	Highland, No. 1,
21	171	William Ferry,	Miner,	50	Hazleton Mine,
22	172	Michael Harkel,	Outside laborer,	55	Lansford, No. 9,
22	173	Andrew Brislin,	Miner,	27	Upper Lehigh, No. 5,
29	174	John May,	Miner,	.	East Crystal Ridge,
Nov. 1	175	Fred. Yocht,	Brakeman,	19	Lattimer, No. 3,
6	176	George Kruger,	Driver,	22	Harleigh,
11	177	Michael Goulding,	Miner,	38	Mount Pleasant,
11	178	Daniel McHugh,	Miner,	.	Lansford, No. 9,
13	179	James Gallagher,	Driver,	.	Nesquehoning,

Continued.

Remarks on the Extent and Cause of Accidents.	Explosion of CH4 gas.	Falls of roof and coal.	By mine cars.	Explosion of blasts and powder.	Miscellaneous inside.	Miscellaneous outside.	Totals.	No. of accident.
Seriously burned on hands, face, and body by a premature blast, and was sent to the Pennsylvania Hospital, Philadelphia,				1			1	117
Slightly burned on hands and face by an explosion of gas,	1						1	118
Severely cut on leg by a piece of coal rolling against it,		1					1	119
Lost two fingers; was caught by dump at breaker,					1		1	120
Arm fractured and shoulder dislocated by falling under mine cars,			1				1	121
Ribs fractured and back injured by fall of clay at stripping,						1	1	122
Hand fractured by jumping off car while going down slope,			1				1	123
Toes fractured by dump at breaker,						1	1	124
Seriously injured on head by a piece of coal falling from the pillar,		1					1	125
Was severely cut on head and body by falling in breaker,						1	1	126
Hands and face burned by an explosion of gas,	1						1	127
Back severely injured by a fall of coal,		1					1	128
Head cut and side bruised by a fall of coal,		1					1	129
Seriously injured on head and body by a fall of coal,		1					1	130
Collar-bone fractured, and head cut by a fall of coal,		1					1	131
Arm fractured; fell in breaker,						1	1	132
Rib fractured by a piece of slate that slid against him,		1					1	133
Seriously injured by fall of coal and slate in gangway,		1					1	134
Foot fractured by a fall of slate,		1					1	135
Hand severely cut by a piece of coal from battery,		1					1	136
Seriously injured on head and body by a fall of coal; he was taken to the Drifton hospital,		1					1	137
These two boys were severely scalded about hands and bodies by escaped steam from a bursting steam pipe,					1		1	138
					1		1	139
Severely cut on foot by an ax slipping while making a set of timber,						1	1	140
Leg fractured by a fall of earth at the stripping,						1	1	141
Leg fractured by a fall of coal,		1					1	142
Arm fractured by falling under a mine car,			1				1	143
Injured on hip and back by a fall of coal,		1					1	144
Seriously injured on head and shoulder by a fall of the six-foot bends,		1					1	145
Severely cut on leg by a small piece of coal from a blast,				1			1	146
Was seriously injured by falling a distance of forty feet in the breaker,						1	1	147
These three men were severely burned by an explosion of gas in battery. The fire-boss testified that he failed to find any trace of gas in the place in the morning, and it is supposed that the gas came down with a rush of coal from the top, a place that could not be examined,	1						1	148
	1						1	149
	1						1	150
Severely injured; squeezed between a car and pillar near slope,			1				1	151
Cut on head and arm by a fall of coal,		1					1	152
Seriously injured by a fall of coal, and sent to the Pennsylvania Hospital, Philadelphia,		1					1	153
Dangerously injured by a fall of coal while sitting near face of breast,		1					1	154
Thumb cut off at first joint; was caught between sprag and wheel,			1				1	155
Injured on body and legs; was squeezed between a mule car and a pillar,			1				1	156
Foot badly crushed by a fall of coal,		1					1	157
Severely cut and bruised on leg by a fall of coal,		1					1	158
Arm fractured; caught between top of a car and a collar,			1				1	159
Severely injured by a runaway car on slope,			1				1	160
Arm fractured and head cut by a fall of coal,		1					1	161
Ankle fractured and otherwise injured about body at the stripping,						1	1	162
Slightly burned by an explosion of gas,	1						1	163
These two men were severely burned by an explosion of gas, which was brought in contact with their naked lamps by a rush of coal,	1						1	164
	1						1	165
These two men were seriously injured by a fall of coal. They claim they had no warning whatever before the coal fell, which is very doubtful,		1					1	166
		1					1	167
Leg fractured by a fall of coal,		1					1	168
Severely cut about body by a fall of coal,		1					1	169
Seriously injured by a fall of rock in breast,		1					1	170
Ribs fractured by a rush of coal in breast,		1					1	171
Back bruised and otherwise injured by mine car,			1				1	172
Back severely injured by a fall of slate while in the act of propping it,		1					1	173
Head and side cut by a fall of coal,		1					1	174
Fell in front of moving cars and seriously injured about body,			1				1	175
Arm dislocated by a kick from a mule,					1		1	176
Hip dislocated, and otherwise injured about body by a fall of clod,		1					1	177
Leg fractured; was struck by a sliding prop,					1		1	178
Thumb cut off; was caught between a sprag and car wheel,			1				1	179

TABLE No. 6—

DATE.	No. of accident.	Names of Persons Injured.	Occupation.	Age.	Name of Collieries.
Nov. 13	180	Frederick Bimbler,	Driver,		Nesquehoning,
14	181	Michael Smith,	Driver,		Nesquehoning,
15	182	Robert Fichter,	Footman,	20	Lattimer, No. 2,
15	183	Michael McCue,	Miner,		Hazleton Mine,
17	184	David Davis,	Brakeman,		Nesquehoning.
17	185	George Hughes,	Miner,		Lansford, No. 9,
18	186	Michael McFadden,	Laborer,		Lansford, No. 9,
18	187	James Riley,	Miner,		Hazleton Mine,
19	188	Solomon Thomas,	Miner,		Nesquehoning,
19	189	Mike Wasker,	Laborer,		Tresekow,
21	190	Samuel Carlin,	Miner,	45	Hazleton, No. 8,
25	191	John Jacobisky,	Laborer,	28	Upper Lehigh, No. 2,
26	192	William Smith,	Miner,	50	Milnesville,
28	193	August Yost,	Miner,	20	Milnesville,
28	194	Peter Mikleyohn,	Miner,	40	West No. 1, Stockton,
28	195	Andrew Barlock,	Laborer,		Hollywood stripping,
29	196	Andrew Miron,	Laborer,		Hollywood stripping,
29	197	Thomas Jones,	Miner,		Lansford, No. 6,
29	198	Dennis McHugh,	Miner,		Lansford, No. 4,
Dec. 1	199	Michael Brennan,	Miner,	33	Lattimer, No. 2,
2	200	George Yost,	Miner,		Upper Lehigh, No. 1,
3	201	Edward Wilbur,	Miner,		Lansford, No. 4,
5	202	Daniel Cohahan,	Miner,		East Crystal Ridge,
12	203	Joseph Micturn,	Laborer,	34	Drifton, No. 1,
13	204	Joseph Stevenson,	Miner,		Nesquehoning,
16	205	Thomas McGillaway,	Laborer,		No. 9 Lansford,
16	206	John Brokenshire,	Miner,		Nesquehoning,
16	207	John Gallagher,	Miner,	38	Drifton, No. 1,
16	208	Stephen S. Jones,	Miner,	22	Jeansville, No. 7,
16	209	Michael Gilbert,	Miner,	35	Stockton, No. 2,
16	210	John Brown,	Miner,	35	Hazleton Mine,
18	211	Francis McHugh,	Laborer,	23	Gowen,
18	212	Patrick Feely,	Laborer,		Hazleton Mine,
20	213	Charles Booth,	Driver,		Hazleton, No. 6,
20	214	Peter McGill,	Laborer,	22	Oak Dale, No. 2,
24	215	Gustav Muerhof,	P. boy,	18	Sugar Loaf,
29	216	Daniel Daley,	Miner,		Lansford, No. 9,
29	217	John Lyons,	Slate-picker,		Lansford, No. 9,
29	218	Dure Homaker,	Laborer,		Lansford, No. 6,

Nationality by Birth of Persons Injured in and about the Mines of this District during the Year 1884.

Irish,	68
Americans,	36
Germans,	35
Hungarians,	32
English,	19
Welsh,	16
Scotch,	4
Polish,	3
Italians,	1
	217

Continued.

Remarks on the Extent and Cause of Accidents.	Explosion of CH4 gas.	Falls of roof and coal.	By mine cars.	Explosion of blasts and powder.	Miscellaneous inside.	Miscellaneous outside.	Totals.	No. of accident.
Forefinger cut off; caught while coupling cars,	..	..	1	..	..	..	1	180
Foot badly injured; was caught by car wheel,	..	..	1	..	..	..	1	181
Injured on hip; was struck by a piece of coal that rolled down slope,	..	1	..	..	..	..	1	182
Severely injured on back by a fall of coal,	..	1	..	..	..	..	1	183
Foot badly injured; was caught in a frog, car going over it,	..	..	1	..	..	..	1	184
Knee fractured; fell from platform to gangway,	..	..	..	..	1	..	1	185
Forefinger fractured by a lump of coal,	..	1	..	..	..	..	1	186
Hand severely cut by a piece of coal falling on it,	..	1	..	..	..	..	1	187
Hand badly cut by a fall of coal,	..	1	..	..	..	..	1	188
Leg fractured by a piece of coal rolling on it,	..	1	..	..	..	..	1	189
Seriously injured about head and body by a fall of slate,	..	1	..	..	..	..	1	190
Contusion of shin-bone and loin by a roll of coal face,	..	1	..	..	..	..	1	191
Severely cut on hip and leg by a fall of coal,	..	1	..	..	..	..	1	192
Seriously injured on back and body by a fall of coal,	..	1	..	..	..	..	1	193
Bruised on shoulders by a fall of coal,	..	1	..	..	..	..	1	194
) These men were slightly burned by an explosion of powder through (	..		..	1	..	..	1	195
(their carelessness in handling fire, (	..		..	1	..	..	1	196
Face and hands burned by an explosion of Atlas powder,	..		..	1	..	..	1	197
Leg fractured by a fall of coal in a manway,	..	1	..	..	..	..	1	198
Leg fractured by a fall of coal,	..	1	..	..	..	..	1	199
Injured on head and leg by a fall of coal,	..	1	..	..	..	..	1	200
Knee severely cut with an ax while preparing timber,	..	..	..	..	1	..	1	201
Thumb fractured; a piece of coal fell on it,	..	1	..	..	..	..	1	202
Leg badly crushed by a runaway car; was taken to hospital at Drifton, where leg was amputated,	..	..	..	..	..	..	1	203
Burned about hands and face by an explosion of gas,	1	..	..	..	..	..	1	204
End of forefinger cut off by a rail falling on it,	..	..	..	..	1	..	1	205
Eye severely injured by a piece of coal from the pick; was sent to the Pennsylvania Hospital, Philadelphia,	..	..	..	..	1	..	1	206
Ankle crushed by a fall of rock; was taken to the hospital, where leg was amputated,	..	1	..	..	1	..	1	207
Severely injured by falling down slope,	..	1	..	..	..	..	1	208
Severely injured on back and breast by a rush of coal from battery,	..	1	..	..	..	..	1	209
Hands and face burned by an explosion of gas,	1	..	..	..	..	..	1	210
Leg fractured by a piece of coal from blast,	..	..	..	1	..	..	1	211
Hand badly injured; was caught between a sprag and a car wheel,	..	..	1	..	..	..	1	212
Arm fractured and otherwise injured by a fall of coal,	1	..	..	..	..	..	1	213
Seriously injured; he fell under a mine car while endeavoring to jump out,	..	..	1	..	..	..	1	214
Severely cut about body by flying coal from a premature blast,	..	..	..	1	..	..	1	215
Leg sprained; he fell down steps at breaker,	..	..	..	..	..	1	1	216
Side and hip severely injured; slipped and fell down steps at breaker,	..	..	..	..	..	1	1	217
	20	80	59	10	26	22	218	

Recapitulation and Table of Comparison.

	1881.	1882.	1883.	1884.
Explosion of carbureted hydrogen gas,	11	8	26	20
Falls of all kind,	25	58	64	80
Injured by cars,	32	28	35	59
Premature blasts and powder explosions,	1	13	11	10
Miscellaneous inside,	7	7	17	26
Miscellaneous outside,	9	22	17	22
Total,	88	136	173	217

TABLE No. 7.—*Gives the total number of tons of coal mined in each colliery, number of days worked, ratio of coal mined per day, number of employés, ratio of coal mined per employé, number of persons killed and injured, ratio of coal mined per person killed and per person injured, ratio of persons employed per fatal and non-fatal accidents, number of kegs of powder used, number of tons mined per keg, &c., for the year 1884.*

A. PARDEE & CO.

NAMES AND NUMBER OF COLLIERIES.	Total production of each colliery for the year 1884 in tons.	Number of days worked.	Ratio of coal mined per day in tons.	Number of employees.	Ratio of coal mined per employee.	Number of fatal accidents.	Ratio of coal mined per fatal accident.	Number of non-fatal accidents.	Ratio of coal mined per non-fatal accidents.	Ratio of persons employed per fatal accidents.	Ratio of persons employed per non-fatal accidents.	Number of kegs of powder used.	Ratio of coal mined per keg used in tons	Number of pounds of powder used.
Hazleton Mine,	103,320	192.5	536	310	333	.	. .	14	7,380	. .	23 8	1,226	84	42
Laurel Hill,	96 299	192	501	262	367	.	. .	10	9.629	. .	26.2	960	100	36
Number Six,	108 647	198.7	546	205	530			5	20 729		41	1.934	56	35
Number Three,	50,406	186	271	169	298	1	50,406	3	16.802	169	56 3	492	102 4	21
Sugar Loaf,	35 909	151	238	159	226	1	35 909	10	3 590	159	15 9	363	98.9	21
South Sugar Loaf,	37 906	152	249	127	298	1	37 906			127		895	42 3	20
Cranberry,	78 057	159 5	490	373	209	1	78.057	4	19,514	373	93	2,549	30 6	30
East Crystal Ridge,	32,620	160	204	92	355	1	32 620	3	10,873	92	30.6	612	53.3	12
Men employed generally about the collieries,	. .			74							.	. . . .		30
	543,164	173.9	3,123	1,771	306	5	108.633	49	11,085	354	36	9,034	60	237

COXE BROS. & CO.

Cross Creek, No. 1,	236 521	205	1,153	530	445	3	78 840	6	39.420	177	88	5,351	44.5	35
Cross Creek, No. 2,	164 204	203	809	408	402	1	161,204	7	23,458	408	58	2,982	55	51
Cross Creek, No. 3,	1 878	9	208			. .		1				16		
West Cross Creek,	127 158	279	455	343	371			5	25.436	. .	68.6	2 656	47.8	23
Lower Cross Creek,	78 974	166	475	11		2	39,487	2	39 487	. .		2.159	36.5	4
Middle Cross Creek,	69 259	221	313	290	239		. .	2	34 629	. .	145	2.027	36 6	28
Beaver Meadow,	127,544	203	628	418	305	. .	. .	2	63 772		209	2,772	46	37
	865,538	211	3 764	2,000	402	6	134 256	25	32,221	333	80	17,963	44 8	178

LINDERMAN, SKEER & CO.

East Sugar Loaf, No. 1	61,490	196.4	313	165	372			4	15,122		41 25	865	76.3	14
East Sugar Loaf, No. 2	59,396	220	270	137	433	1	59,396	4	18,849	137	34 25	392	151	20
East Sugar Loaf, No. 3	115,453	217.5	521	250	453							1,945	58.3	24
East Sugar Loaf, No. 5	121,359	218.8	554	223	544							2,082	58 2	23
Humboldt	70,884	195.6	362	161	440	1	70,884	1	70,883	161	161	1,450	48 8	24
	426,582	208.4	2,046	936	455	2	213,291	9	47,338	468	104	6,674	63.7	105

LEHIGH COAL AND NAVIGATION COMPANY.

Nesquehoning, No. 3	138,274	200.1	691	397	348	2	69,037	17	8,134	198	23 3	1,440	96	20
Lansford, No. 4	121,402	189.7	641	284	427			3	40,467		94.6	480	252	33
Lansford, No. 5	84,953	183.6	446	294	278	3	27,317	8	16,244	98	36 7	1,260	68	5
Lansford, No. 6	71,622	184.6	388	305	235	3	23,874	3	23,874	132	102			15
Lansford, No. 9	120,705	189.6	636	413	292	2	60,352	14	8,622	206	29	1,680	71	16
Hauto screen building				115										
	533,956	189.5	2,817	1,808	295	10	53,395	45	11,886	180.8	40	4,800	111.2	78

G. B. MARKLE & CO.

Oak Dale, No. 1	92,442	157.1	558	203	455	1	92,442	2	46,221	203	101	1,449	63.7	37
Oak Dale, No. 2	91,667	151 3	625	200	473			2	47,333		100	1,546	61.2	35
Highland, No. 1	116,833	145.4	803	227	514			3	38,944		75	2,516	46 4	42
Highland, No. 2	54,254	114 7	473	199	273							1,207	44.9	39
Other employees				58										31
	358,197	112.4	2,520	887	404		358,197	7	54,171	887	126 7	6,718	53 3	184

PARDEE BROS. & CO.

Lattimer, No. 1	74,939	159 2	470	220	358			2	37,469		110	1,189	66	25
Lattimer, No. 2	81,404	168.8	482	250	325			5	16,280		50	1,040	78	28
Lattimer, No. 3	79,442	142.6	557	187	424	1	79,442	2	39,720	187	93	1,937	39	10
	235,785	156.8	1,517	657	358		235,785	9	26,196	657	73	4,166	56 6	63

UPPER LEHIGH COAL COMPANY.

Upper Lehigh, No. 2	182,849	175.2	1,043	397	460	3	60,949	5	36,569	132	79.8	3,635	503	50
Upper Lehigh, No. 4	177,317	211 2	839	253	709			3	59,196		84	3,178	55.7	46
	360,166	198.2	1,817	650	554	3	120,055	8	45,020	216	81	6,813	52.8	96

TABLE No. 7—*Continued.*

NAMES AND NUMBER OF COLLIERIES.	Total production of each colliery for the year 1884, in tons.	Number of days worked.	Ratio of coal mined per day in tons.	Number of employees.	Ratio of coal mined per employee.	Number of fatal accidents.	Ratio of coal mined per fatal accident.	Number of non-fatal accidents.	Ratio of coal mined per non-fatal accidents.	Ratio of persons employed per fatal accidents.	Ratio of persons employed per non-fatal accidents.	Number of kegs of powder used.	Ratio of coal mined per keg used in tons.	Number of pounds of powder used.
J. LEISENRING & CO.														
Council Ridge, No. 2	158,495	164	966	419	379	1	158 495	3	52 831	419	139.6	3 061	51.7	53
Council Ridge, No. 5	196 646	198	993	329	597	2	98 323	3	62,215	1,645	109.6	3,000	65	27
	355,141	181	1,962	748	474	3	118 380	6	59,190	249	124.7	6 064	58.5	80
J. C. HAYDON & CO.														
Spring Mountain, No. 1	102 089	180	567	273	374	. .	. . .	5	20,418	. . .	54 6	2,280	44.7	43
Spring Mountain, No. 4	113,160	182	621	274	413	. .	.	8	14 145	. . .	34.2	2,100	53.9	44
	215 249	181	1,189	547	393		. . .	13	16,558	. . . .	42	4,380	49	77
G. H. MYERS & CO.														
Yorktown, No. 5	89.925	196	459	197	456	. .		3	29,275		65.6	1 108	81	20
Yorktown, No. 6	101,757	218	465	221	460	1	101,757	4	25.439	221	55	1,870	54	25
	191,682	207	926	418	458	1	191,682	7	27,383	418	59 7	2,978	64 3	45

MISCELLANEOUS COMPANIES.

Ebervale Coal Company,	173,907	190.5	912	361	482	3	57,969	7	24 844	120	51.5	1.765	98 5	45
William T. Carter & Co.,	169,950	178	954	480	354	2	84,975	2	84,975	240	240	2 330	72.9	47
Hollywood,	100,410	154 3	650	255	393	.		5	20,082	. .	51	1.060	98.8	41
Mt. Pleasant,	139,131	167.4	831	438	318	1	139,131	3	46 377	438	146	3 461	49.2	49
Treskow,	132 784	184.5	719	364	364	2	66,391	4	33.196	187	93	2,433	54	31
Beaver Brook,	138.162	194.2	711	273	506	. .	. . . .	3	46,054	. . . .	91	2 863	48.2	26
Sandy Run,	147,174	199.7	737	331	444	. . .	. . . .	. . .	. . . .	. . . .	. . .	2 753	53 4	45
Harleigh,	96,362	195	494	328	294	.	. . .	8	12.038	. . . .	41	2,527	38	36
Milnesville,	79.902	188	425	188	425	. . .	. . . .	5	15,980	. . . .	37.6	551	145	29
Pond Creek,	50 750	186	273	205	247	. .	. . . .	1	50,749	. . . .	205	2,078	24.4	12
Hazle Brook,	20,295	117	173	115	176		. . .	. . .	. . . .	. . . .	. . .	620	32.7	7
	1,248,767	177.7	7,055	3,338	374	8	156,096	38	32,864	417	87	22,441	55.6	368

RECAPITULATION.

A. Pardee & Co.,	543 164	173.9	3,123	1.771	306	5	198.633	49	11,085	354	36	9,034	60	237
Coxe Bros. & Co.,	805.538	214	3.764	2,000	402	6	134,256	25	32,221	333	80	17 963	44.8	178
Linderman, Skeer & Co.,	426 582	208.4	2 046	936	455	2	213 221	9	47,338	468	104	6.674	63.7	105
Lehigh Coal and Navigation Company,	533 956	189.5	2,817	1,803	295	10	53,395	45	11,866	180	40	4.800	112	78
G. B. Markle & Co.,	358.197	142.1	2.520	887	404	1	358.197	7	51.171	887	126	6 718	53 3	184
Pardee Bros. & Co.,	235 785	156.8	1.517	657	358	1	235 784	9	26 196	657	73	4.166	56.6	63
Upper Lehigh Coal Company,	360.166	198.2	1,817	650	554	3	120 055	8	45 020	216	81	6,813	52 8	96
J. Leisenring & Co.,	355 141	181	1,962	748	474	3	118 380	6	59.190	249	124	6,064	58.5	89
J. C. Haydon & Co.,	215.249	181	1 189	547	393			13	16.558		42	4 380	49	77
G. H. Myers & Co.,	191 682	207	926	418	458	1	191 682	7	27.283	418	59	2.978	64 3	45
Miscellaneous companies,	1,248 767	177.7	7,055	3,338	374	8	156,096	38	32,864	417	87	22,441	55.6	368
Men engaged at the several strippings,				457										
	5,274 227	184.5	28,737	14,299	368	40	131,885	217	24 305	357	65.9	92,031	57.3	1,511

TABLE No 8.—*Number of each class of employés at each colliery during the year 1884.*

A. PARDEE & CO.

NAME AND NUMBER OF COLLIERY	NUMBER OF EMPLOYEES INSIDE.											NUMBER OF EMPLOYEES OUTSIDE.											Grand totals inside and out.
	Mine bosses.	Engineers & pumpmen.	Miners.	Miners' laborers.	Men timbering.	Road and repairmen.	Drivers and car runners.	Men at top and bottom of slopes or planes.	Oilers and door-boys.	Men employed at other work, if any.	Total inside.	Breaker and screen bosses.	Hoisting and pumping engineers.	Firemen.	Machinists.	Carpenters and blacksmiths.	Breaker men in all capacities.	Drivers.	Slate-pickers.	Teamsters, choppers, stable bosses, &c.	Superintendents, ass't superintendents, clerks, and book-keepers.	Total outside.	
Hazleton Mine,	2	. .	93	27	6	7	14	5	4	1	159	5	11	6	. . .	5	52	6	66	. .	. .	151	310
Laurel Hill,	2	1	42	29	8	5	10	8	6	4	115	4	13	6	. . .	9	39	2	72	2	. .	147	262
No. 6,	1	. .	47	32	.	2	13	3	2	.	100	3	3	4	. . .	3	20	1	74	. .	. .	105	205
No. 3	1	. .	35	6	7	2	7	1	1	1	81	2	7	4	. . .	3	21	. .	50	. .	. .	88	169
Sugar Loaf,	1	. .	25	12	2	2	9	2	3	2	78	2	11	6	. . .	4	24	. .	32	2	. .	81	159
South Sugar Loaf,	1	. .	43	12	2	2	8	2	4	.	72	2	4	2	. . .	3	11	. .	33	. .	. .	55	127
Cranberry,	3	5	133	33	3	5	14	8	5	6	215	5	4	5	. . .	7	13	. .	114	1	. .	158	373
East Crystal Ridge,	1	. .	24	4	.	2	6	3	2	. .	42	2	5	2	. . .	3	19	. .	19	. .	. .	50	92
Men, &c., employed generally about the collieries,	. .	.	. .	.			. .		.	.	.	. .	. . .	. .	11	22	. .	. .	. . .	30	11	74	74
	12	6	462	165	36	27	81	32	27	14	862	26	57	33	11	59	208	9	460	35	11	909	1,771

COXE BROS. & CO.

Cross Creek, No. 1,	1	8	157	93	16	26	31	8	5	26	371	3	5	7	. .	9	36	5	94	. .	. .	159	530
Cross Creek, No. 2,	2	3	70	44	20	24	33	4	8	7	215	4	5	7	7	7	28	2	97	12	21	190	405
Cross Creek, No. 3,*	. .	.	.	.	.	.	.	.	.	.	.	.	.	3	. .	.	.	.	.	.	.	3	3
West Cross Creek,	1	1	94	43	11	6	18	4	6	31	215	2	5	5	. .	13	23	4	68	6	1	127	343
Lower Cross Creek,†	1	. .	.	.	.	.	.	.	.	1	1	.	. .	.	9	.	.	. .	.	2	. .	11	12
Middle Cross Creek,	1	2	97	23	14	8	18	3	1	6	173	2	4	6	. .	8	31	2	57	6	1	117	290
Beaver Meadow,	1	2	85	59	6	21	26	5	2	66	273	3	7	7	5	14	24	1	77	6	1	145	418
	7	16	503	262	67	85	126	24	22	136	1,248	14	26	35	21	51	142	14	393	32	24	752	2,001

* Not in operation since January 22, 1884.

† Not in operation since July 20, 1884; breaker burned that day.

LINDERMAN, SKEER & CO., STOCKTON.

No. 1,	1	1	51	30		1	5	2	4	4	99	1	2	2	. . .	2	25	1	33	. . .	. . .	66	165
No. 2,	1	6	21	13	9	21	5	1	1	. . .	59	1	3	4	. .	4	20	3	43	. . .	.	78	137
No. 3,	1	8	40	24		5	7	10	5	46	146	1	4	4	. .	4	36	2	50	. .	3	104	250
No. 5,	2	3	52	42	8	3	13	2	3		128	1	3	4	. .	4	41	3	37	. . .	2	95	223
Humboldt,	1	4	32	30	4	10	12	3	2	. .	98	1	3	4	.	4	14	1	26	5	5	63	161
Men at stripping and doing general work,	.	.	. . .	. .		.	.	.	.		.	.	. . .	.	.	. .	.	. .	. . .	. .	.	82	82
	6	22	196	139	21	21	42	18	15	50	530	5	15	18		18	136	10	189	5	10	488	1,018

LEHIGH COAL AND NAVIGATION COMPANY.

Nesquehoning, No. 3,	6	4	74	46	38	. .	26	8	24	. .	226	6	3	8	1	6	63	9	71	4	.	171	397
Lansford, No. 4,	5	2	24	50	47	4	19	3	13	. .	167	3	4	8	. .	3	35	7	55	2	. . .	117	284
Lansford, No. 5,	3	2	84	36	24	4	20	13	10	. .	196	4	2	5	. . .	2	43	4	36	2	. . .	98	294
Lansford, No. 6,	2	10	71	71	18	2	13	6	3		196	4	5	4	. .	9	33	9	38	7	. . .	109	305
Lansford, No. 9,	2		112	81	16	4	23	.	9	26	273	6	4	6	.	4	48	6	63	3	.	140	413
Hauto screen building,	.	.		. .	.	.	. . .	. .	. .			2	2	4	2	2	58	5	40	. . .	. .	115	115
	*18	18	365	284	143	14	101	30	59	26	1 058	25	20	35	3	26	280	40	303	18		750	1.808

*Including fire bosses.

G. B. MARKLE & CO., JEDDO.

Oak Dale, No. 1,	1	3	93	7	2	4	21	5	7	. .	143	2	1	4	6	3	13	3	28	. . .	.	60	203
Oak Dale, No. 2,	1	2	96	15	. .	3	23	4	8		152	2	1	4	6	3	8	2	12	. . .	. .	48	200
Highland, No. 1,	1	4	102	12	. .	4	20	4	6	. .	153	2	1	2	6	3	14	2	44	. .	. . .	74	227
Highland, No. 2,	1	4	88	16	. .	1	16	5	6	. .	137	2	1	2	6	3	10	2	36		. .	62	199
Other employees about the collieries,	.	.	. .	. .	.	.	.	. . .	. . .	. . .	.	. .	.	. .	.	. .	.	. . .	. . .	.	48	10	58	58
	4	13	379	50	2	12	80	18	27	. . .	585	8	4	12	21	12	45	9	130	48	10	302	887

PARDEE BROS. & CO., LATTIMER.

Lattimer, No. 1,	1	2	43	34	3	3	14	5	2	2	109	2	1	2	1	6	19	3	69	5	2	111	220
Lattimer, No. 2,	1	5	85	10	5	3	15	4	5	13	146	2	1	2	. . .	4	20	3	71	. .	. . .	104	250
Lattimer, No. 3,	1	1	47	18	. .	1	6	4	3	. .	81	3	1	2	. . .	4	25	2	68	. . .	. . .	106	187
	3	8	175	62	8	7	35	13	10	15	336	7	3	6	1	14	64	8	208	5	2	321	657

TABLE No. 8—*Continued.*

UPPER LEHIGH COAL COMPANY, UPPER LEHIGH.

Name and Number of Colliery.	Number of Employees Inside.											Number of Employees Outside.											Grand totals, inside and out.
	Mine bosses.	Engineers & pumpmen.	Miners.	Miners' laborers.	Men timbering.	Road and repairmen.	Drivers and car runners.	Men at top and bottom of slopes or planes.	Oilers and door-boys.	Men employed at other work, if any.	Total inside.	Breaker and screen bosses.	Hoisting and pumping engineers.	Firemen.	Machinists.	Carpenters and blacksmiths.	Breaker men in all capacities.	Drivers.	Slate-pickers.	Teamsters, choppers, stable bosses, &c.	Superintendents, ass't superintendt's, clerks, and book-keepers.	Total outside.	
Upper Lehigh, No. 1,	1	2	8	13	..	1	5	3		..	244	1	1	..				1	.			153	397
Upper Lehigh, No. 2,	1	4	20	21	..	1	9	4	1	.		2 5	1	5	3	6	23	3	80	3	9		
Upper Lehigh, No. 5,	1	1	37	29		2	11	4	2				1		2			1	..		..		
Upper Lehigh, No. 6,	1	1	25	15		1	6	3	1	10			2	1		2		1	..		..		
Upper Lehigh, No. 4,	1	2	60	63	.	2	16	4	6	..	154	5	4	6		4	23	3	51	3	..	99	253
	5	10	150	141		7	47	18	10	10	398	13	9	12	5	12	46	9	131	6	9	252	650
J. LEISENRING & Co., COUNCIL RIDGE.																							
Council Ridge, No. 5,	1	7	100	106	..	22	25	9	8	1	279	2 2	4	8	1	6	50	3	49	11	6	140	419
Council Ridge, No. 6,	1	3	77	85	.	14	31	8	9	1	229		2	4		4	22	2	64	..	.	100	329
	2	10	177	191	..	36	56	17	17	2	508	4	6	12	1	10	72	5	113	11	6	240	748
J. C. HAYDON & Co., JEANSVILLE.																							
Spring Mountain, No. 1,	1	1	54	56	..	3	21	3	5	.	170	4		6	..	4	20	3	45	..	..	88	258
Spring Mountain, No. 8,	..	..	10	8	..	1	3	2	2	.		.	2 2	.	.	.	.	.	2 2	.	.		
Spring Mountain, No. 4,	1	1	30	32	..	2	19	..	6	.	170	4	4	4	..	4	26	3	39	..	..	89	259
Spring Mountain, No. 7,	1	2	28	32	..	2	9	2	3	..		..	2 2	2	..	.	..	1	..	..	..		
												..	..	..	2	7			..	16	5	30	30
	3	4	122	128	..	8	52	7	16	..	340	8	10	12	2	15	46	9	84	16	5	207	547

G. H. MYERS & Co., YORKTOWN.

Yorktown, No. 5,	1	2	33	27	.	3	15	3	1	25	110	4	6	6	.	5	9	4	46	4	3	87	197
Yorktown, No. 6,	1	3	46	35	.	5	12	2	1	40	145	3	3	5	.	5	9	3	48	.	. .	76	221
	2	5	79	62		8	27	5	2	65	255	7	9	11	. .	10	18	7	94	4	3	163	418

MISCELLANEOUS COMPANIES.

Ebervale Coal Co., Ebervale,	3	8	89	36	30	5	21	8	3	5	188	3	4	14	2	5	30	5	74	31	5	173	361
W. T. Carter & Co., Coleraine,	2	6	62	81	8	8	33	13	7	15	235	5	7	8	1	8	106	25	80	2	3	245	480
Hollywood,	1	1	13	49		7	17	8	3	.	99	1	3	4		11	44	6	82	2	3	156	255
Mount Pleasant,	1	. .	102	72	6	6	22	8	8	2	227	4	13	7	. . .	8	57	2	111	6	3	211	438
Treskow,	2	1	86	56	2	2	17	4	6	16	192	3	7	6	. .	7	57	4	84	1	3	172	364
Beaver Brook,	1	5	45	68		5	10	8	5	.	147	2	2	9	1	6	25	3	70	4	4	126	273
Sandy Run,	1	8	66	73	6	7	25	7	8	.	195	3	6	4	1	4	30	1	72	11	4	136	331
Harleigh,	1	4	88	42	5	6	15	4	8	2	175	3	6	4	3	9	22	3	92	6	5	153	328
Milnesville,	1	1	39	10	7	4	6	6	5	1	80	2	5	4	1	6	31	2	51	2	4	108	188
Pond Creek,	1	4	55	14	1	2	8	3	4		92	2	1	4	. .	2	62	1	38	2	1	113	208
Hazle Brook,	1		39	21	. .	4	5	1	3	.	74	1	1	2	. .	1	8	1	20	5	2	41	115
	15	38	678	522	45	56	179	70	60	41	1,704	29	55	66	9	67	472	53	774	72	37	1,634	3,338

RECAPITULATION.

A. Pardee & Co.,	12	6	462	165	36	27	81	32	27	14	862	26	57	33	11	59	208	9	460	35	11	909	1,771
Coxe Bros. & Co.,	7	16	503	262	67	85	126	24	22	136	1 248	14	26	35	21	51	142	14	393	82	24	752	3,001
Linderman, Skeer & Co.,	6	22	196	139	21	21	42	18	15	50	530	5	15	18	. .	18	189	10	189	5	10	488	1 018
Lehigh Coal and Navigation Co.,	18	18	365	284	143	14	101	30	59	26	1,058	25	20	35	3	26	280	40	303	18	. .	750	1,808
G. B. Markle & Co.,	4	13	379	50	2	12	80	18	27		585	8	4	12	24	12	45	9	130	48	10	302	887
Pardee Bros. & Co.,	3	8	175	62	8	7	35	13	10	15	336	7	3	6	1	14	64	8	208	5	2	321	657
Upper Lehigh Coal Company,	5	10	150	141		7	47	18	10	10	398	13	9	12	5	12	46	9	131	6	9	252	650
J. Leisenring & Co.,	2	10	177	191	. . .	36	56	17	17	1	508	4	6	12	1	10	72	5	113	11	6	240	748
J. C. Haydon & Co.,	3	4	122	128	.	8	32	7	16		340	8	10	12	2	15	46	9	84	16	5	267	547
G. H. Myers & Co.,	2	5	79	62		8	27	5	2	65	255	7	9	11	. .	10	18	7	94	4	3	163	418
Miscellaneous companies,	15	38	678	522	45	56	179	170	60	41	1,704	29	55	66	9	67	472	53	774	72	37	1,634	3,338
Men engaged at the several strippings,		. . .	. . .			. . .	.	.		. . .			.	.	.	. .	. .	.		. .	. .	457	457
	77	150	3,786	2,006	322	281	826	252	265	358	7,824	146	214	252	77	294	1,529	173	2,879	252	117	6,475	14,299

TABLE No. 9.—*Giving the names and location of Collieries, also the names of sylvania, for the year*

NAME OF COLLIERY.	Location of Colliery.	Name of Operator.
Hazleton Mine,	Hazleton, Luzerne county,	A. Pardee & Co.,
Laurel Hill,	do. do.	do.
Number Three,	do. do.	do.
Number Six,	do. do.	do.
Cranberry,	do. do.	do.
East Crystal Ridge,	do. do.	do.
Sugar Loaf,	do. do.	do.
South Sugar Loaf,	do. do.	do.
Cross Creek, No. 1,	Drifton, do.	Coxe Bros. & Co.,
Cross Creek, No. 2,	do. do.	do.
Cross Creek, No. 3,	do. do.	do.
West Cross Creek,	Gowen, do.	do.
Lower Cross Creek,	Derringer, do.	do.
Middle Cross Creek,	Tomhicken, do.	do.
Beaver Meadow,	Beaver Meadow, Carbon co.,	do.
East Sugar Loaf, No. 1,	Stockton, Luzerne county,	Linderman, Skeer & Co.,
East Sugar Loaf, No. 2,	do. do.	do. do.
East Sugar Loaf, No. 3,	do. do.	do. do.
East Sugar Loaf, No. 5,	do. do.	do. do.
Humboldt,	Humboldt, do.	do. do.
Room Run, No. 3,	Nesquehoning, Carbon co.,	Lehigh Coal and Navigation Co.,
Lansford, No. 4,	Lansford, Carbon county,	do. do.
Lansford, No. 5,	do. do.	do. do.
Lansford, No. 6	do. do.	do. do.
Lansford, No. 9,	do. do.	do. do.
Oak Dale, No. 1,	Jeddo, Luzerne county,	G. B. Markle & Co.,
Oak Dale, No. 2,	do. do.	do.
Highland, No. 1,	do. do.	do.
Highland, No. 2,	do. do.	do.
Upper Lehigh, No. 1,	Upper Lehigh, do.	Upper Lehigh Coal Company,
Upper Lehigh, No. 2,	do. do.	do. do.
Upper Lehigh, No. 4,	do. do.	do. do.
Upper Lehigh, No. 5,	do. do.	do. do.
Upper Lehigh, No. 6,	do. do.	do. do.
Lattimer, No. 1,	Lattimer, do.	Pardee Bro. & Co.,
Lattimer, No. 2,	do. do.	do.
Lattimer, No. 3,	do. do.	do.
Council Ridge, No. 2,	Eckley, do.	J. Leisenring & Co.,
Council Ridge, No. 5,	do. do.	do.
Spring Mountain, No. 1,	Jeanesville, do.	J. C. Haydon & Co.,
Spring Mountain, No. 4,	do. do.	do.
Yorktown, No. 5,	Yorktown, Carbon county,	G. H. Myers & Co.,
Yorktown, No. 6,	do. do.	do.
Ebervale No. 1,	Ebervale, Luzerne county,	Ebervale Coal Company,
Ebervale No. 2,	do. do.	do. do.
Ebervale No. 3,	do. do.	do. do.
Colerraine, No. 1,	Beaver Meadow, Carbon co.,	W. T. Carter & Co.,
Colerraine, No. 2,	do do.	do.
Hollywood,	Hollywood, Luzerne county,	Calvin Pardee & Co.,
Mt. Pleasant,	Mt. Pleasant, do.	Pardee Sons & Co.,
Tresckow,	Audenried, Carbon county,	L. & W. B. Coal Company,
Beaver Brook,	Beaver Brook, Luzerne co.,	C. M. Dodson & Co.,
Sandy Run,	Sandy Run, do.	M. S. Kemmerer & Co.,
Harleigh,	Harleigh, do.	Kemmerer & Co.,
Milnesville,	Milnesville, do.	Stout Coal Company,
Pond Creek,	Sandy Run, do.	M. S. Kemmerer,
Hazle Brook,		J. S. Wentz & Co.,

operator and officers in the South District of Luzerne and Carbon counties, Penn-ending December 31, 1884.

Name of General Superintendent.	Name of General Inside Foreman.	Name of General Outside Foreman.	Name of Inside Foreman.
Frank Pardee,	Thomas Dickinson,	Samuel D. Taylor,	Peter Watson.
do.	do.	do.	James Durkin. / William Porter.
do.	do.	do.	Hy. Youngscourt.
do.	do.	do.	John Scott.
do.	do.	do.	Conrad Miller.
do.	do.	do.	Benjamin Rees.
do.	do.	do.	John W. Ferry.
do.	do.	do.	William Fatkin.
Eckley B. Coxe,	Edgar Kudlich, min. eng.	John Wagner, outs. sup.	Isaac D. William. / Patrick Boyce.
do.	do.	do.	David James.
do.	do.	do.	
do.	do.	do.	Evan Watkin.
do.	do.	do.	Adam Sacks.
do.	do.	do.	Rees Davis.
do.	do.	do.	Thomas W. Howells.
do.	do.		
William Airey,	John Airey,		T. R. Edwards.
do.	do.		William Cooke.
do.	do.		John Gundry.
do.	do.		Josiah Jenkins.
do.	do.		William James.
William D. Zehner,	Richard Enstice,	Richard Justice,	Benjamin Hammond. / Hugo Ronamous.
do.	William X. Evans,	Gouv. Morris,	Thomas M. Whildin.
do.	do.	do.	Archie Reeves.
do.	do.	do.	John W. Davis.
do.	do.	do.	Charles Powell.
John Markle,	Samuel Dunkerly,	John Hague,	Joel Stevens.
do.	do.	do.	John H. Boyle.
do.	do.	do.	Henry Horrox.
do.	do.	do.	John C. Turner.
A. C. Leisenring,	William Powell, Sr.,		Thomas Kromise.
do.	do.		William Powell, Jr.
do.	do.		Gomer E. Jones.
do.	do.		Thomas Shippard.
do.	do.		James W. Jones.
C. Pardee,	William Martin,	J. C. Brittain,	Charles Embling.
do.	do.	do.	Robert Fagan.
do.	do.	do.	Henry Dinlocker.
J. S. Wentz,		George Rickert,	James Long.
do.		do.	Peter Pitt.
J. C. Haydon,	David Macfarlane,	David Macfarlane,	John McTaggart.
do.	do.	do.	Samuel Williams.
George John,	George John,	George John,	Evan Rees.
do.	do.	do.	William Davis.
T. D. Jones,	Jacob Shumacker,	Milton Drum,	J. Shumacker.
do.	do.	do.	William Job.
do.	do.	do.	George Nesbitt.
John Wear,	John Wear,	John Wear,	William H. Dunn.
do.	do.	do.	William M. Davis.
C. Pardee,	George Kerschner,	John S. Jacobs.	
do.	Joseph Dixon,	Thomas W. Howells.	
J. I. Hollenback, res. eng.	Owen R. Evans,	R. Hopkins,	Jacob Evans. / Pat. Gallagher.
E. L. Bullock,	Daniel J. Thomas,	Robert Russel.	
Walter Leisenring,	Thomas Charlton.		
M. S. Kemmerer,	Thomas Griffith,	John Leib.	
Charles Kerbaugh,			Martin Corrigan.
J. Leisenring,			Patrick Brennan.
J. S. Wentz,			Levi Harris.

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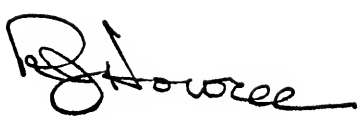
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